FCC Test Report

Rexon Technology Co., LTD.
VHF portable handheld radio, Model: PJ2+

In accordance with FCC 47 CFR Part 2 and FCC 47 CFR Part 87 (VHF)

Prepared for: Rexon Technology Co., LTD.
No. 261
Jenhua Rd.
Dali Dist
Taichung City 412
Taiwan

FCC ID: I7OPJ22

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Document 75955568-02 Issue 03

SIGNATURE			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Steve Marshall	Senior Engineer (RF)	Authorised Signatory	13 October 2022

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT
The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 2 and FCC 47 CFR Part 87. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Neil Rousell	13 October 2022	
Testing	Graeme Lawler	13 October 2022	

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY
A sample of this product was tested and found to be compliant with FCC 47 CFR Part 2: 2020 and FCC 47 CFR Part 87: 2020 for the tests detailed in section 1.3.

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TUV SUD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuvsud.com/en

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire PO15 5RL
United Kingdom

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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	14 September 2022
2	Amend FCC ID and model number	27 September 2022
3	To amend the manufacturer's name and address.	13 October 2022

Table 1

1.2 Introduction

Applicant	Rexon Technology Co., LTD
Manufacturer	Rexon Technology Co., LTD
Model Number(s)	PJ2+
Serial Number(s)	Not serialised Storix ID (650288-002) and Not serialised Storix ID (650288-003)
Hardware Version(s)	PJ2+_0.2.0.05
Software Version(s)	PJ2+_Factory_0.0.0.9_1 test.set
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 2: 2020 FCC 47 CFR Part 87: 2020
Order Number Date	Signed QAF 12-May-2022
Date of Receipt of EUT	17-May-2022
Start of Test	14-June-2022
Finish of Test	07-August-2022
Name of Engineer(s)	Neil Rousell and Graeme Lawler
Related Document(s)	KDB 971168 D01 v03r01 ANSI C63.26 (2015)

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 2 and FCC 47 CFR Part 87 is shown below.

Section	Specification Clause		Test Description	Result	Comments/Base Standard
	FCC Part 2	FCC Part 87			
Configuration and Mode: VHF transmitter					
2.1	2.1046	87.131	Power and Emissions	Pass	
2.2	2.1055	87.133	Frequency Stability	Pass	
2.3	2.1049	87.135	Bandwidth of Emission	Pass	
2.4	2.1051	87.139	Spurious Emissions at Antenna Terminals	Pass	
2.5	2.1051	87.139	Radiated Spurious Emissions	Pass	
2.6	2.1047	87.141	Modulation Requirements	Pass	

Table 2

1.4 Application Form

Equipment Description

Technical Description: *(Please provide a brief description of the intended use of the equipment including the technologies the product supports)*	Aviation Portable Radio
Manufacturer:	Rexon Technology Co., LTD
Model:	PJ2+
Part Number:	
Hardware Version:	PJ2+_0.2.0.05
Software Version:	PJ2+_Factory_0.0.0.9_1 test.set
FCC ID of the product under test – see guidance here	I7OPJ22
IC ID of the product under test – see guidance here	

Table 3

Intentional Radiators

Technology	Aviation Portable Radio					
Frequency Range (MHz to MHz)	118.000~136 .975					
Conducted Declared Output Power (dBm)	32.55					
Antenna Gain (dBi)	0					
Supported Bandwidth(s) (MHz) (e.g. 1 MHz, 20 MHz, 40 MHz)	25 kHz					
Modulation Scheme(s) (e.g. GFSK, QPSK etc)	Amplitude Modulation					
ITU Emission Designator (see guidance here) (not mandatory for Part 15 devices)	6K00A3E					
Bottom Frequency (MHz)	118.000					
Middle Frequency (MHz)	127.500					
Top Frequency (MHz)	136.975					

Table 4

Un-intentional Radiators

Highest frequency generated or used in the device or on which the device operates or tunes	209.625 MHz
Lowest frequency generated or used in the device or on which the device operates or tunes	118.000 MHz
Class A Digital Device (Use in commercial, industrial or business environment) ☐ Class B Digital Device (Use in residential environment only) ☐	

Table 5

AC Power Source

AC supply frequency:	50/60	Hz
Voltage	100~240	V
Max current:	0.8	A
Single Phase ☐ Three Phase ☐		

Table 6

DC Power Source

Nominal voltage:	9.0	V
Extreme upper voltage:	9.6	V
Extreme lower voltage:	7.2	V
Max current:	1.5	A

Table 7

Battery Power Source

Voltage:	9.0	V
End-point voltage:	7.2	V *(Point at which the battery will terminate)*
Alkaline ☒ Leclanche ☐ Lithium ☐ Nickel Cadmium ☐ Lead Acid* ☐ **(Vehicle regulated)*		
Other ☐ Please detail:		

Table 8

Charging

Can the EUT transmit whilst being charged	Yes ☐ No ☒

Table 9

Temperature

Minimum temperature:	-30	°C
Maximum temperature:	+50	°C

Table 10

Cable Loss

Adapter Cable Loss (Conducted sample)		dB

Table 11

Antenna Characteristics

Antenna connector ☒			State impedance	50	Ohm
Temporary antenna connector ☐			State impedance		Ohm
Integral antenna ☐	Type:		Gain		dBi
External antenna ☐	Type:	Helical	Gain	0	dBi
For external antenna only: Standard Antenna Jack ☒ If yes, describe how user is prohibited from changing antenna (if not professional installed): BNC Standard Antenna Jack (line 2): The Radio has standard BNC connector with Helical antenna(BNC connector) Equipment is only ever professionally installed ☐ Non-standard Antenna Jack ☐					

Table 12

Ancillaries (if applicable)

Manufacturer:		Part Number:	
Model:		Country of Origin:	

Table 13

I hereby declare that the information supplied is correct and complete.

Name: Maurice Ma
Position held: RD manager
Date: 26 May 2022

1.5 Product Information

1.5.1 Technical Description

Aviation Portable Radio.

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: PJ2+, Serial Number: Not serialised Storix ID (650288-002)			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: PJ2+, Serial Number: Not serialised Storix ID (650288-003)			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 14

1.8 Test Location

TÜV SÜD conducted the following tests at our Fareham Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: VHF transmitter		
Power and Emissions	Neil Rousell	UKAS
Frequency Stability	Neil Rousell	UKAS
Bandwidth of Emission	Neil Rousell	UKAS
Spurious Emissions at Antenna Terminals	Neil Rousell	UKAS
Radiated Spurious Emissions	Graeme Lawler	UKAS
Modulation Requirements	Neil Rousell	UKAS

Table 15

Office Address:

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire
PO15 5RL
United Kingdom

2 Test Details

2.1 Power and Emissions

2.1.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1046
FCC 47 CFR Part 87, Clause 87.131

2.1.2 Equipment Under Test and Modification State

PJ2+, S/N: Not serialised Storix ID (650288-002) - Modification State 0

2.1.3 Date of Test

14-June-2022

2.1.4 Test Method

This test was performed in accordance with ANSI C63.26, clause 5.2.3.3.

2.1.5 Environmental Conditions

Ambient Temperature	23.4 °C
Relative Humidity	49.4 %

2.1.6 Test Results

VHF transmitter

118.000 MHz		127.500 MHz		136.975 MHz	
Maximum Power (dBm)	Maximum Power (W)	Maximum Power (dBm)	Maximum Power (W)	Maximum Power (dBm)	Maximum Power (W)
37.1	5.129	36.6	4.571	36.2	4.169

Table 16 - Power Results

FCC 47 CFR Part 87, Limit Clause 87.131

<10 W

2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Audio Analyser	Hewlett Packard	8903B	1350	12	04-Feb-2023
Attenuator (30dB, 150W)	Narda	769-30	3369	12	26-Jul-2022
True RMS Multimeter	Fluke	179	4006	12	29-Mar-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	30-Jun-2022
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Nov-2022
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Network Analyser	Keysight Technologies	E5063A	5018	12	30-Jul-2022
Electronic Calibration Module	Keysight Technologies	85093C	5188	12	22-Jul-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5475	12	25-Apr-2023

Table 17

O/P Mon – Output Monitored using calibrated equipment

2.2 Frequency Stability

2.2.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1055
FCC 47 CFR Part 87, Clause 87.133

2.2.2 Equipment Under Test and Modification State

PJ2+, S/N: Not serialised Storix ID (650288-002) - Modification State 0

2.2.3 Date of Test

15-June-2022 to 16-June-2022

2.2.4 Test Method

This test was performed in accordance with KDB 971168 D01, clause 9 and FCC 47 CFR Part 2.1055.

2.2.5 Environmental Conditions

Ambient Temperature	22.9 - 23.3 °C
Relative Humidity	46.3 - 50.3 %

2.2.6 Test Results

VHF transmitter

Voltage	Frequency Error (ppm)		
	118.000 MHz	127.500 MHz	136.975 MHz
7.2	-0.54	-0.53	-0.54
9.6	-0.53	-0.53	-0.53

Table 18 - Frequency Stability Under Voltage Variations

Temperature	Frequency Error (ppm)		
	118.000 MHz	127.500 MHz	136.975 MHz
50 °C	-0.54	-0.54	-0.55
40 °C	-0.56	-0.56	-0.56
30 °C	-0.59	-0.59	-0.59
20 °C	-0.54	-0.53	-0.54
10 °C	-0.51	-0.52	-0.52
0 °C	-0.58	-0.58	-0.58
-10 °C	-0.71	-0.70	-0.72
-20 °C	-0.78	-0.77	-0.77
-30 °C	-0.81	-0.77	-0.77

Table 19 - Frequency Stability Under Temperature Variations

FCC 47 CFR Part 87, Limit Clause 87.133

30 ppm

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Modulation Analyser	Hewlett Packard	8901B	45	12	26-May-2023
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Sensor	Hewlett Packard	11722A	493	12	25-Aug-2022
Digital Temperature Indicator	Fluke	51	1385	12	12-Apr-2023
Attenuator (30dB, 150W)	Narda	769-30	3369	12	26-Jul-2022
True RMS Multimeter	Fluke	179	4006	12	29-Mar-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	30-Jun-2022
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5475	12	25-Apr-2023

Table 20

O/P Mon – Output Monitored using calibrated equipment

2.3 Bandwidth of Emission

2.3.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1049
FCC 47 CFR Part 87, Clause 87.135

2.3.2 Equipment Under Test and Modification State

PJ2+, S/N: Not serialised Storix ID (650288-002) - Modification State 0

2.3.3 Date of Test

14-June-2022

2.3.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 5.4.4 and FCC 47 CFR Part 2.1049 to measure the 99% occupied bandwidth.

2.3.5 Environmental Conditions

Ambient Temperature	23.2 °C
Relative Humidity	38.8 %

2.3.6 Test Results

VHF transmitter

99% Occupied Bandwidth (kHz)		
118.000 MHz	127.500 MHz	136.975 MHz
5.1	5.1	5.1

Table 21 - Occupied Bandwidth Results

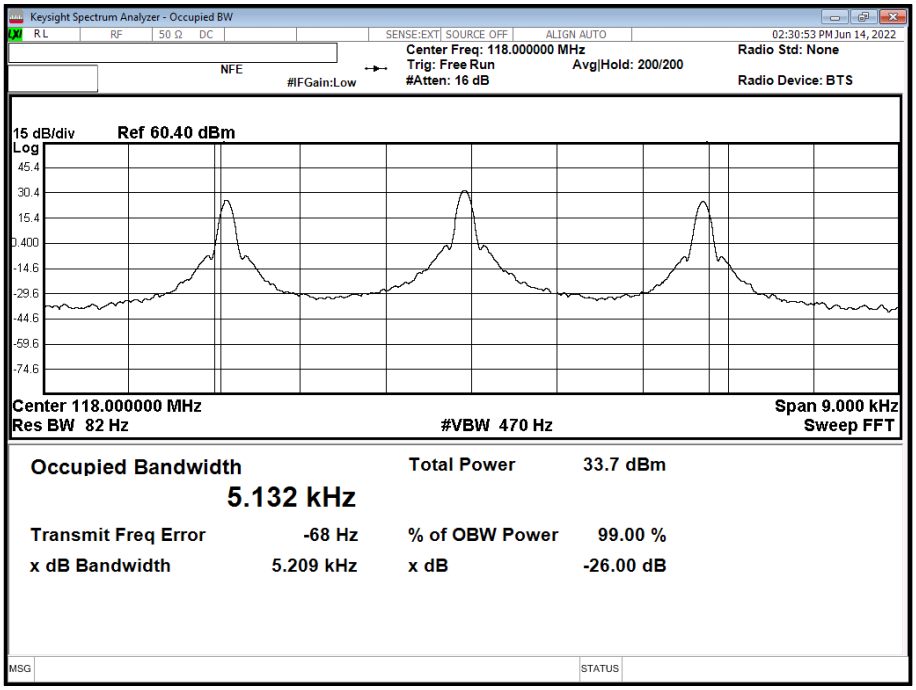

Figure 1 - Occupied Bandwidth - 118.000 MHz

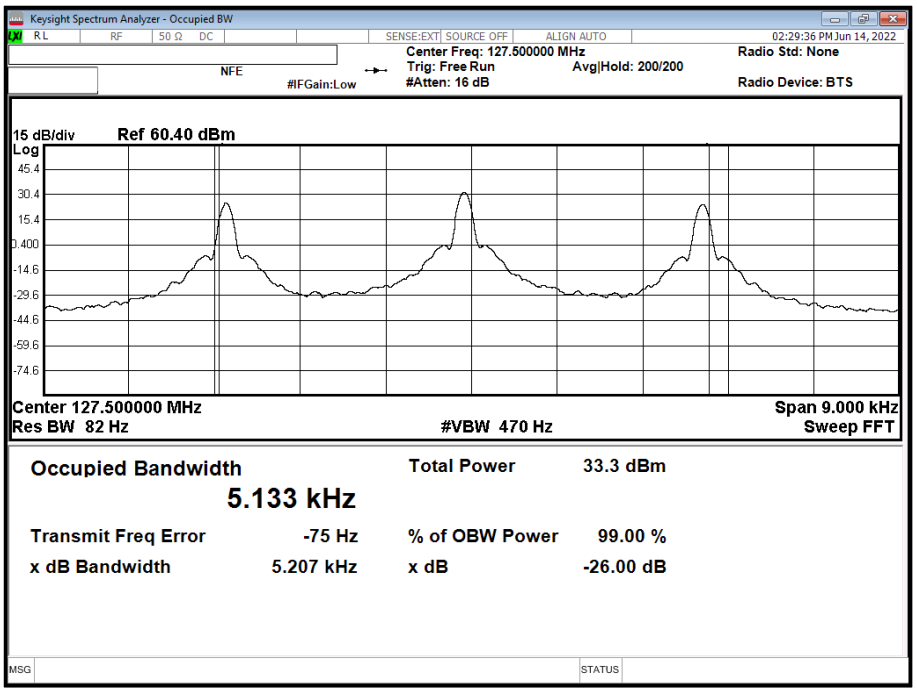

Figure 2 - Occupied Bandwidth - 127.500 MHz

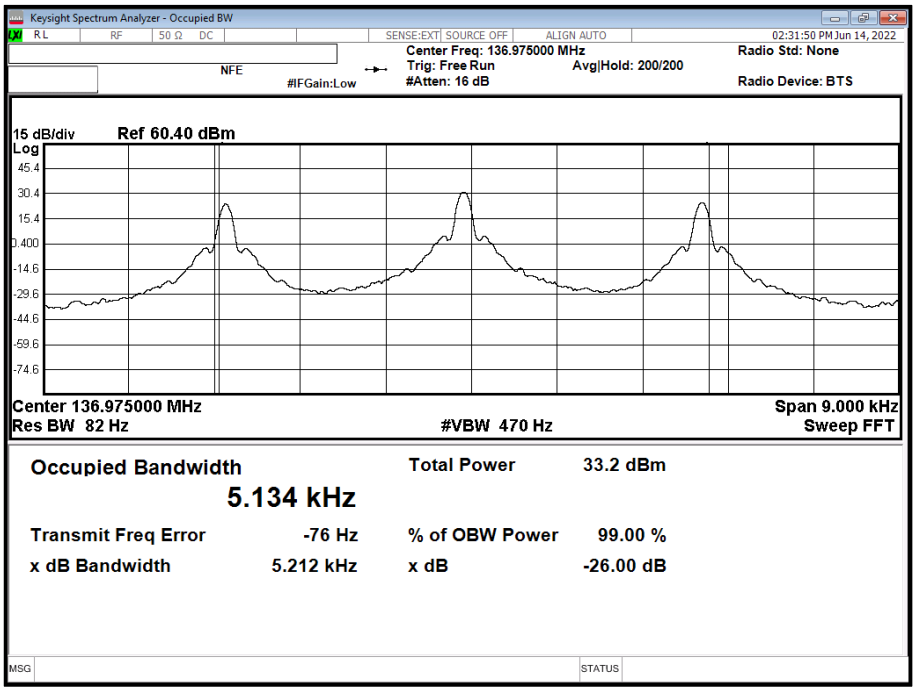

Figure 3 - Occupied Bandwidth - 136.975 MHz

FCC 47 CFR Part 87, Limit Clause 87.135(a)

The authorized bandwidth is the maximum occupied bandwidth authorized to be used by a station.

The authorized bandwidth declared by the manufacturer is: < 25 kHz.

2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Modulation Analyser	Hewlett Packard	8901B	45	12	26-May-2023
Sensor	Hewlett Packard	11722A	493	12	25-Aug-2022
Audio Analyser	Hewlett Packard	8903B	1350	12	04-Feb-2023
Attenuator (30dB, 150W)	Narda	769-30	3369	12	26-Jul-2022
True RMS Multimeter	Fluke	179	4006	12	29-Mar-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	30-Jun-2022
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Nov-2022
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Network Analyser	Keysight Technologies	E5063A	5018	12	30-Jul-2022
Electronic Calibration Module	Keysight Technologies	85093C	5188	12	22-Jul-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5475	12	25-Apr-2023

Table 22

O/P Mon – Output Monitored using calibrated equipment

2.4 Spurious Emissions at Antenna Terminals

2.4.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1051
FCC 47 CFR Part 87, Clause 87.139

2.4.2 Equipment Under Test and Modification State

PJ2+, S/N: Not serialised Storix ID (650288-002) - Modification State 0

2.4.3 Date of Test

14-June-2022 to 15-June-2022

2.4.4 Test Method

This test was performed in accordance with KDB 971168 D01, clause 6.

2.4.5 Environmental Conditions

Ambient Temperature	23.0 - 24.8 °C
Relative Humidity	44.4 - 46.3 %

2.4.6 Test Results

VHF transmitter

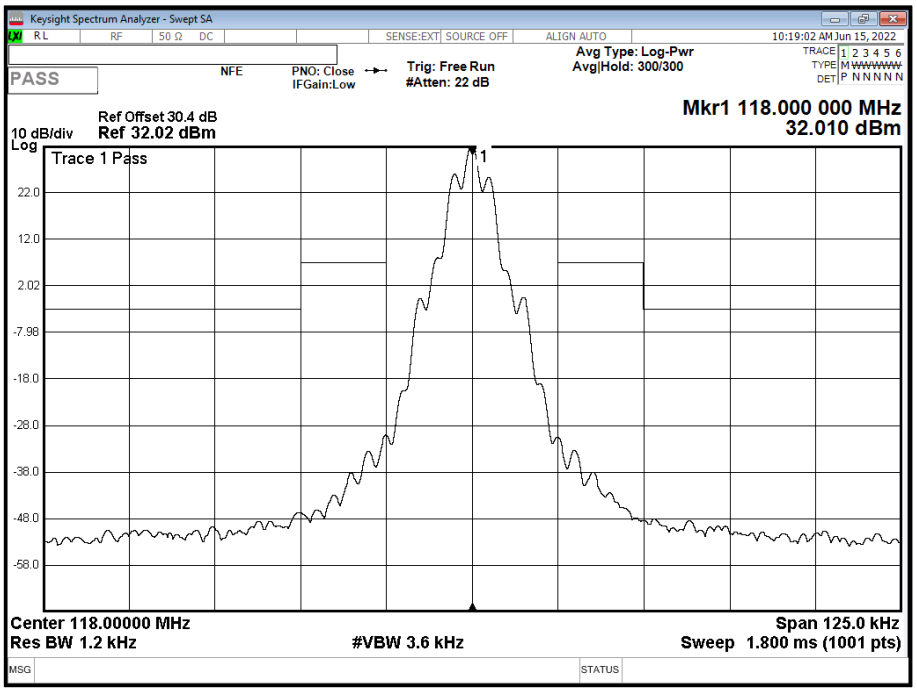

Figure 4 - 118.000 MHz - Transmitter Spectrum Mask

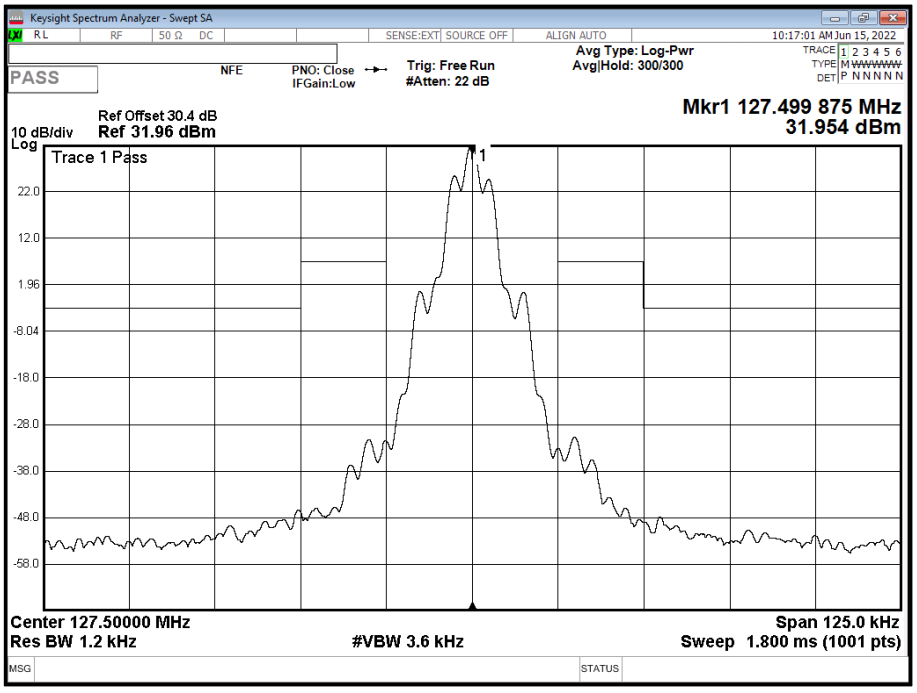

Figure 5 - 127.500 MHz - Transmitter Spectrum Mask

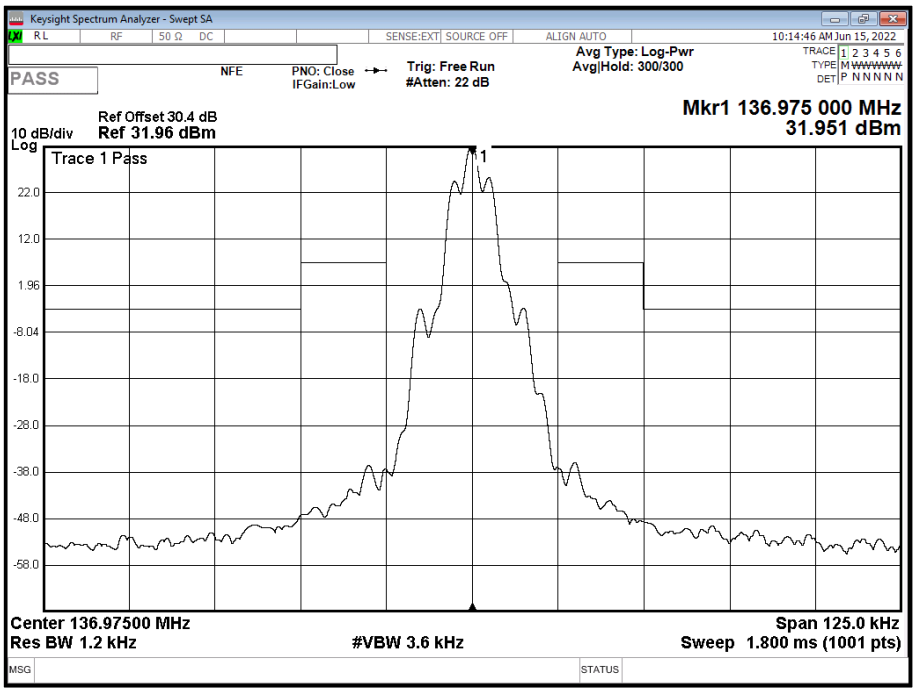

Figure 6 - 136.975 MHz - Transmitter Spectrum Mask

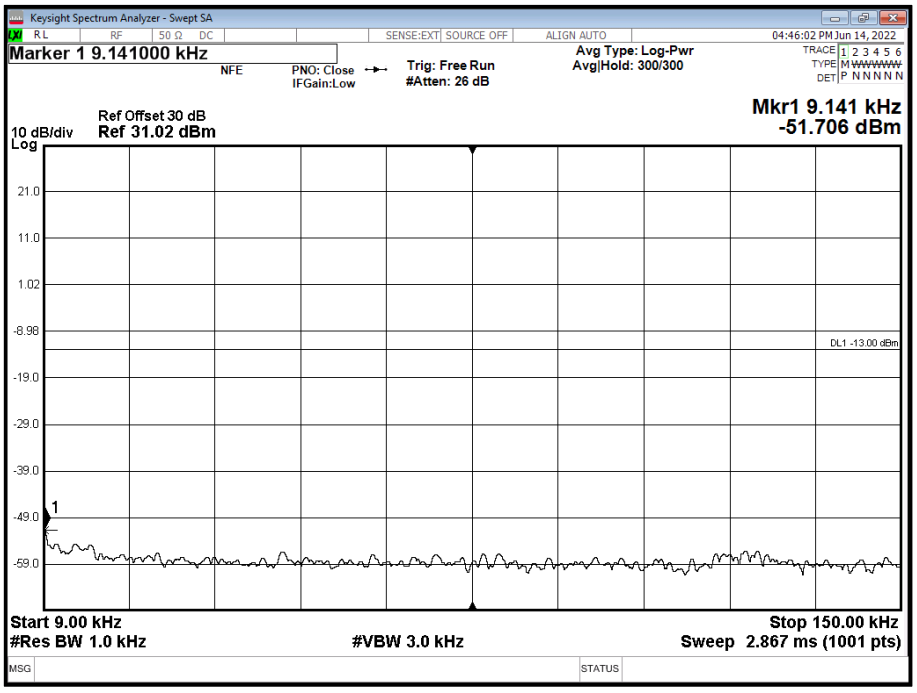

Figure 7 - 118.000 MHz - 9 kHz to 150 kHz

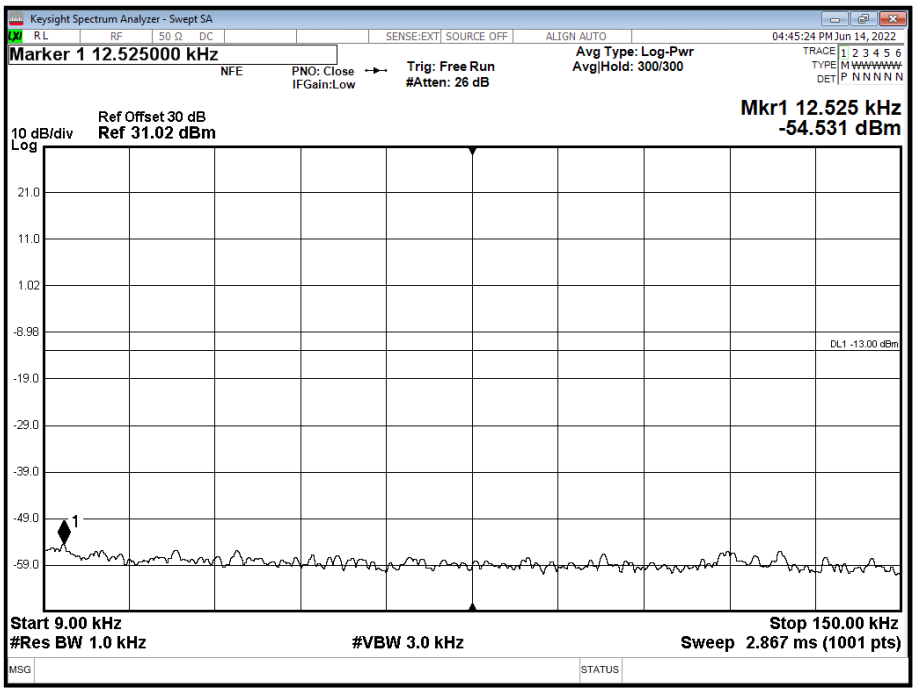

Figure 8 - 127.500 MHz - 9 kHz to 150 kHz

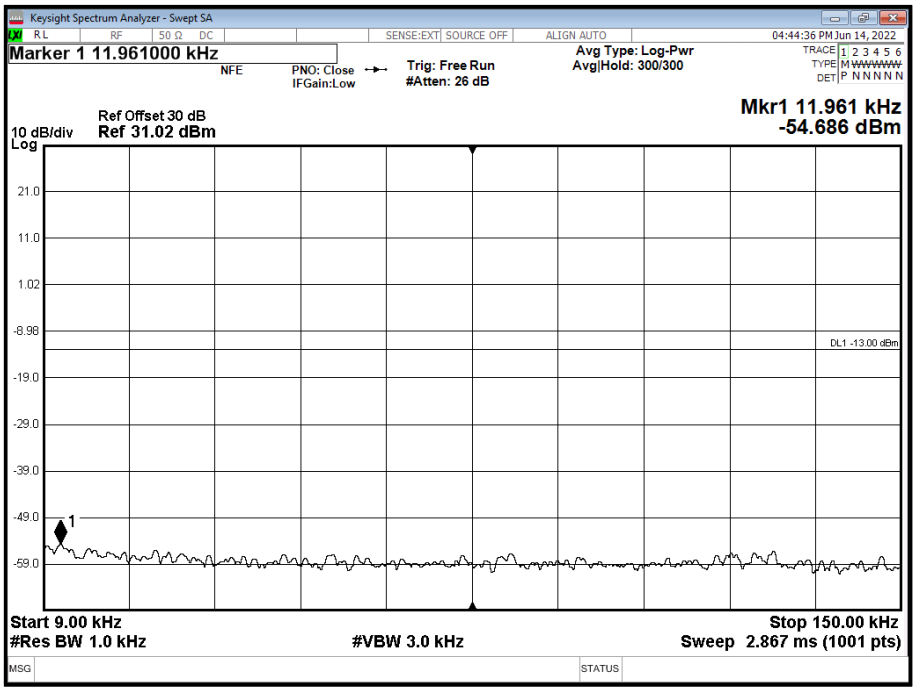

Figure 9 - 136.975 MHz - 9 kHz to 150 kHz

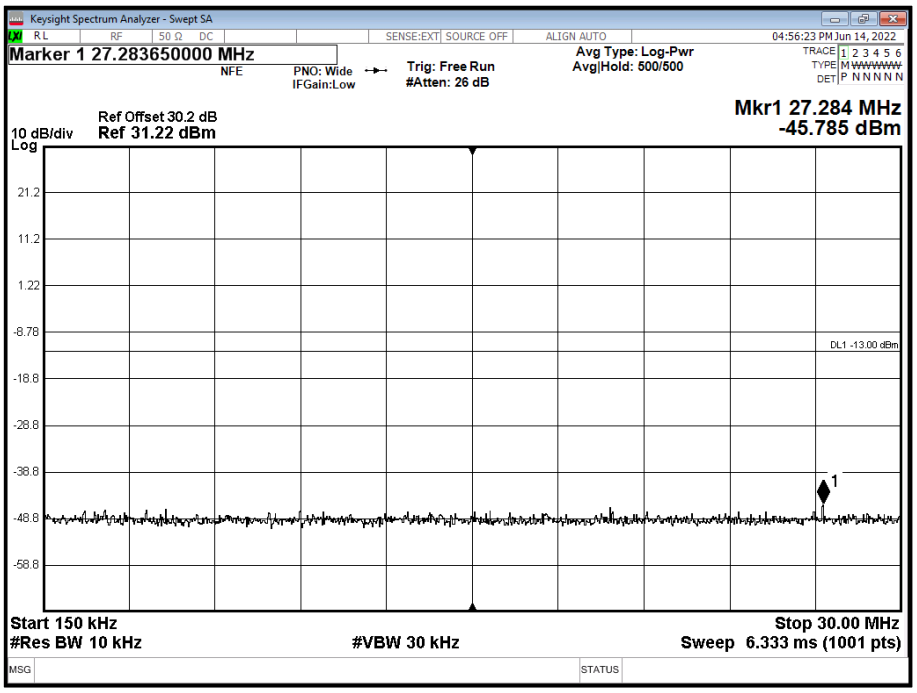

Figure 10 - 118.000 MHz - 150 kHz to 30 MHz

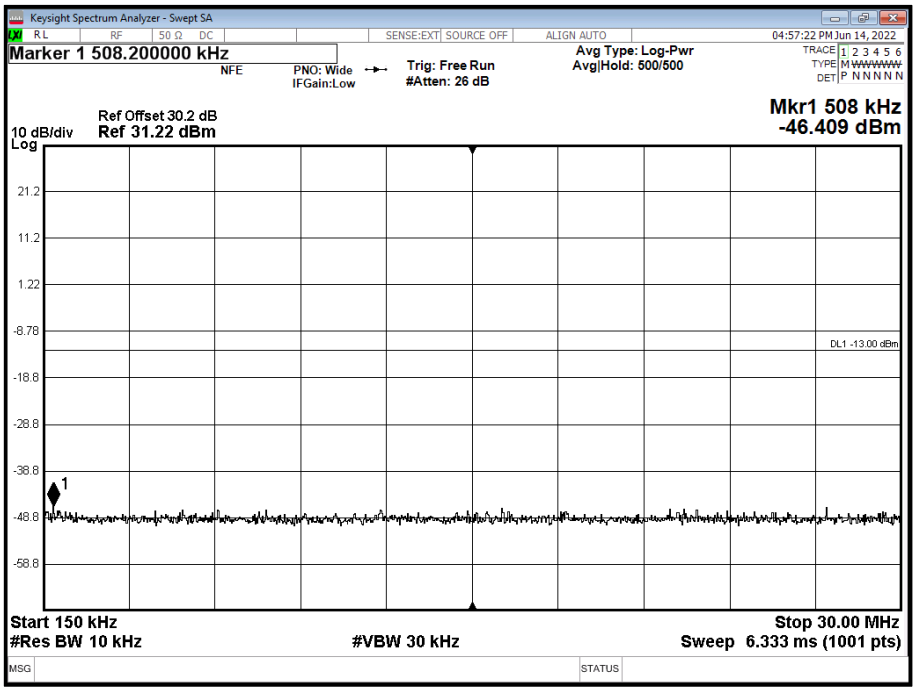

Figure 11 - 127.500 MHz - 150 kHz to 30 MHz

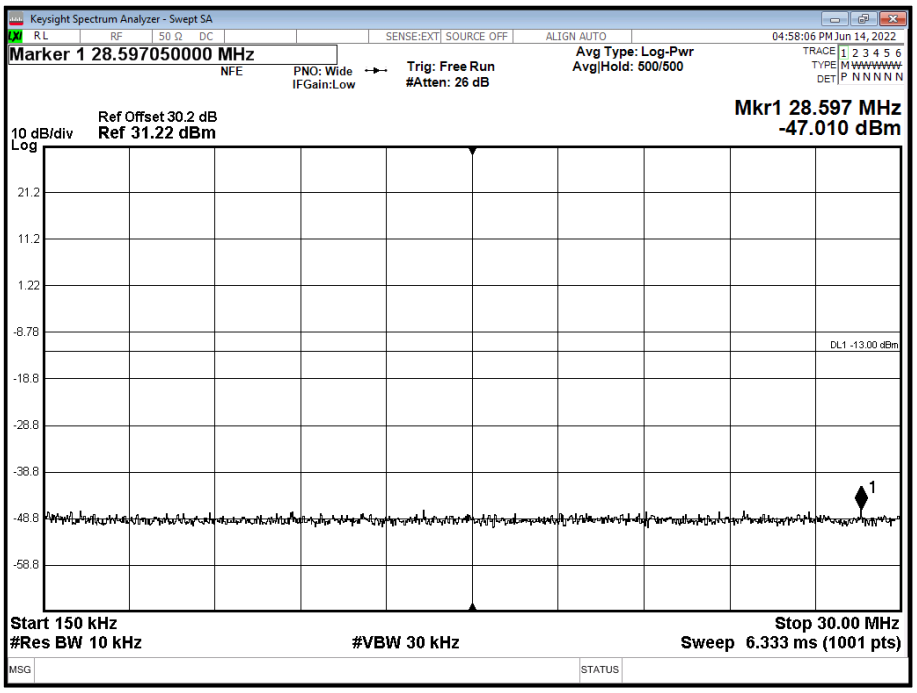

Figure 12 - 136.975 MHz - 150 kHz to 30 MHz

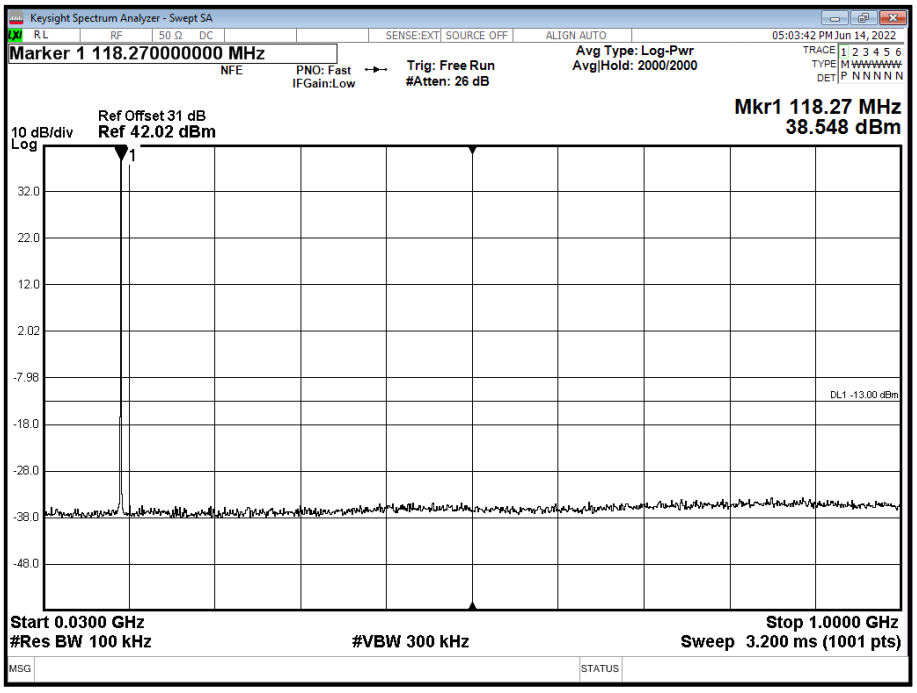

Figure 13 - 118.000 MHz - 30 MHz to 1 GHz

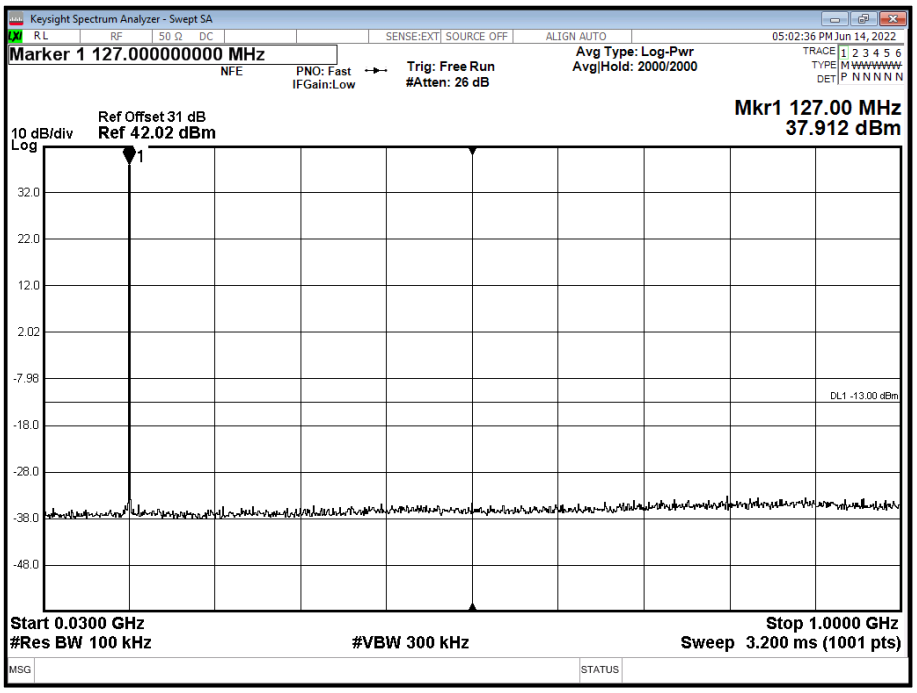

Figure 14 - 127.500 MHz - 30 MHz to 1 GHz

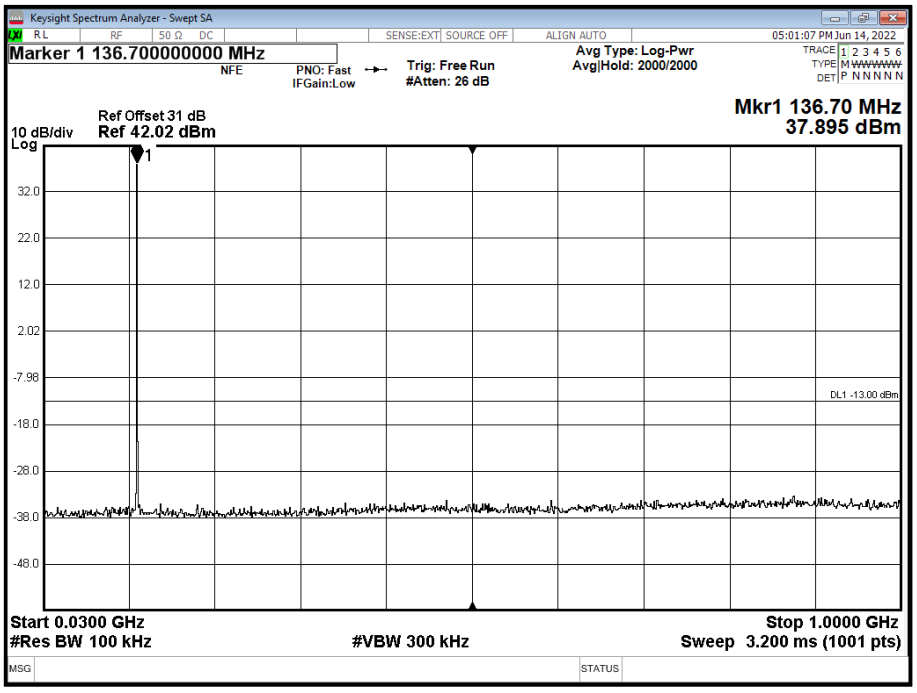

Figure 15 - 136.975 MHz - 30 MHz to 1 GHz

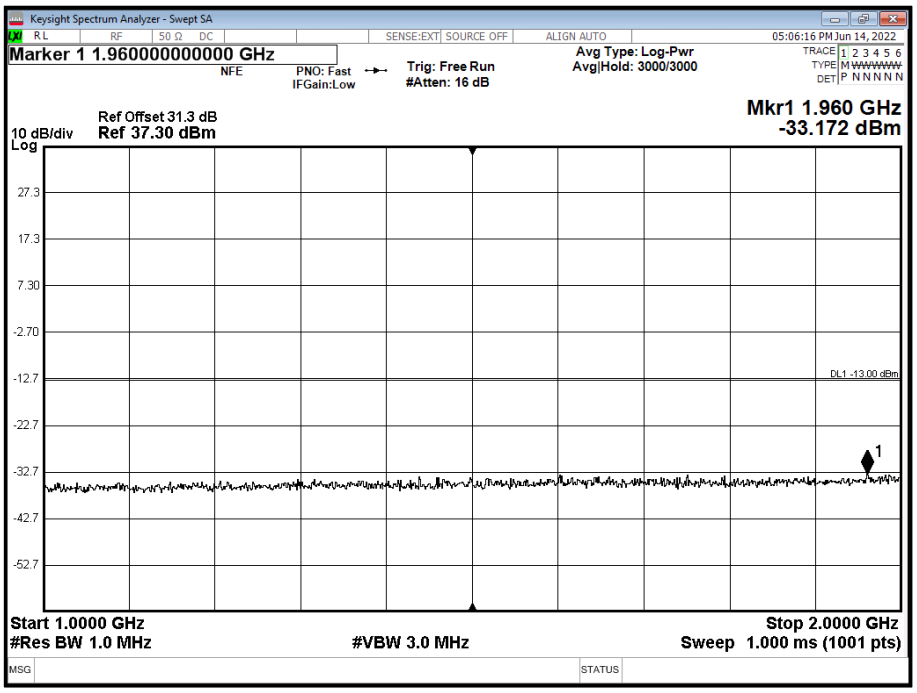

Figure 16 - 118.000 MHz - 1 GHz to 2 GHz

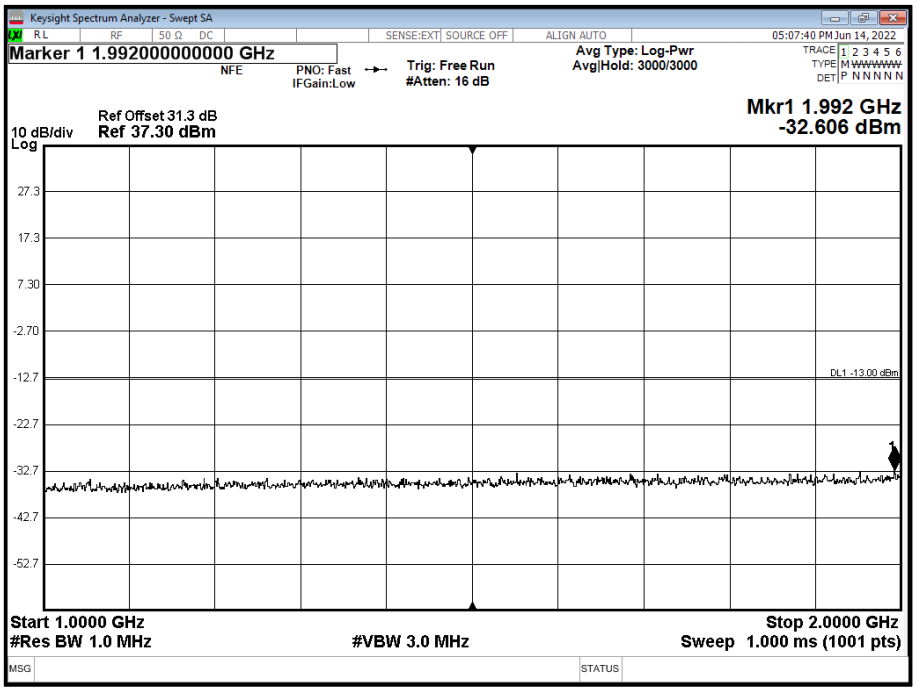

Figure 17 - 127.500 MHz - 1 GHz to 2 GHz

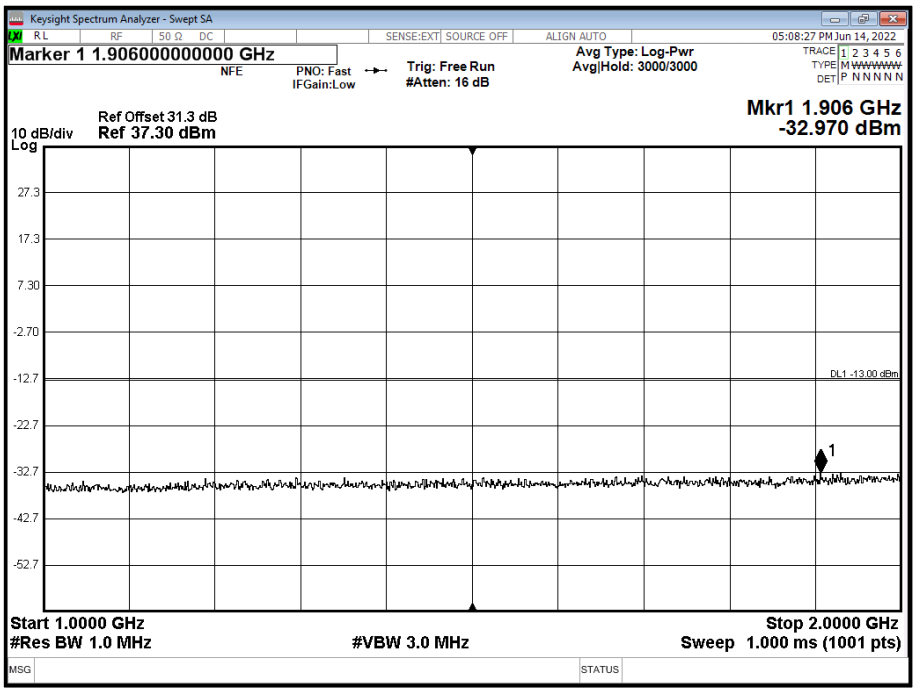

Figure 18 - 136.975 MHz - 1 GHz to 4 GHz

FCC 47 CFR Part 87, Limit Clause 87.139 (a)

Except for ELTs and when using single sideband (R3E, H3E, J3E), or frequency modulation (F9) or digital modulation (F9Y) for telemetry or telecommand in the 1435-1525 MHz, 2345-2395 MHz, or 5091–5150 MHz band or digital modulation (G7D) for differential GPS, the mean power of any emissions must be attenuated below the mean power of the transmitter (pY) as follows:

(1) When the frequency is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth the attenuation must be at least 25 dB;

(2) When the frequency is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth the attenuation must be at least 35 dB.

(3) When the frequency is removed from the assigned frequency by more than 250 percent of the authorized bandwidth the attenuation for aircraft station transmitters must be at least 40 dB; and the attenuation for aeronautical station transmitters must be at least 43 + 10 log10 pY dB.

2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Dual Power Supply Unit	Hewlett Packard	6253A	292	-	O/P Mon
Audio Analyser	Hewlett Packard	8903B	1350	12	04-Feb-2023
Attenuator (30dB, 150W)	Narda	769-30	3369	12	26-Jul-2022
True RMS Multimeter	Fluke	179	4006	12	29-Mar-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	30-Jun-2022
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Nov-2022
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Network Analyser	Keysight Technologies	E5063A	5018	12	30-Jul-2022
Electronic Calibration Module	Keysight Technologies	85093C	5188	12	22-Jul-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5475	12	25-Apr-2023

Table 23

O/P Mon – Output Monitored using calibrated equipment

2.5 Radiated Spurious Emissions

2.5.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1051
FCC 47 CFR Part 87, Clause 87.139

2.5.2 Equipment Under Test and Modification State

PJ2+, S/N: Not serialised Storix ID (650288-003) - Modification State 0

2.5.3 Date of Test

07-August-2022

2.5.4 Test Method

This test was performed in accordance with KDB 971168 D01, clause 5.8 and 7.

The transmitter was amplitude modulated to a depth of 80% with a 1 kHz tone.

2.5.5 Environmental Conditions

Ambient Temperature	22.2 °C
Relative Humidity	41.0 %

2.5.6 Test Results

VHF transmitter

Frequency (MHz)	Level (dBm)
*	

Table 24 - 118.000 MHz - Emissions Results

*No emissions were detected within 10 dB of the limit.

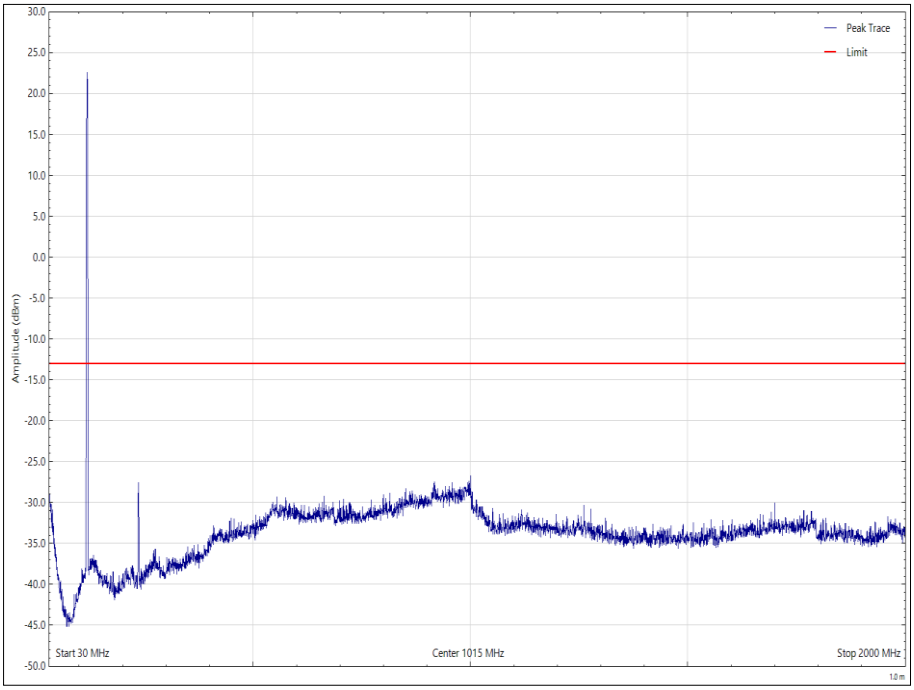

Figure 19 - 118.000 MHz - 30 MHz to 2 GHz - Vertical - X Orientation

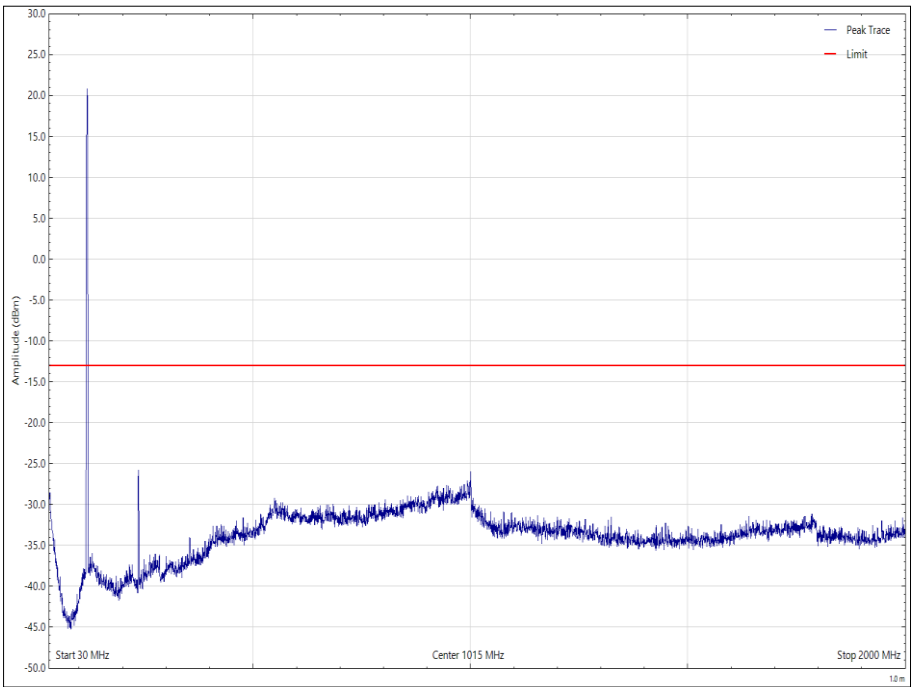

Figure 20 - 118.000 MHz - 30 MHz to 2 GHz - Horizontal - X Orientation

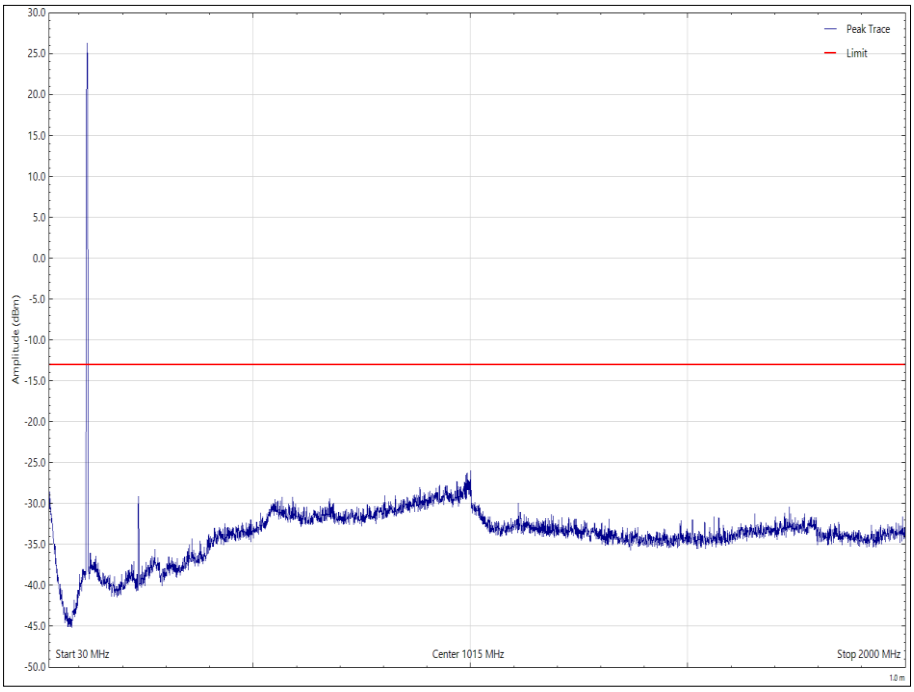

Figure 21 - 118.000 MHz - 30 MHz to 2 GHz - Vertical - Y Orientation

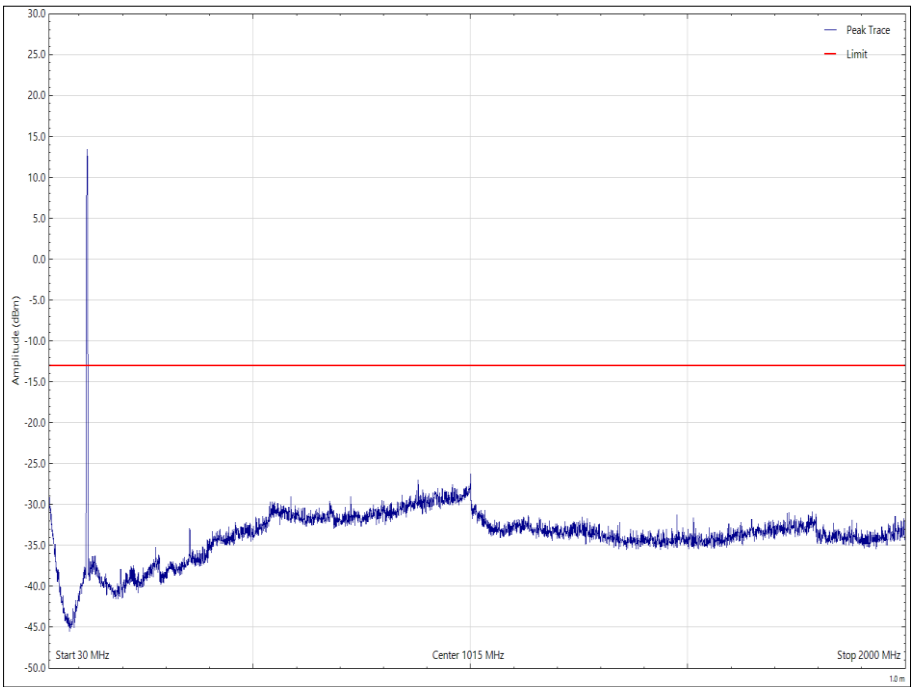

Figure 22 - 118.000 MHz - 30 MHz to 2 GHz - Horizontal - Y Orientation

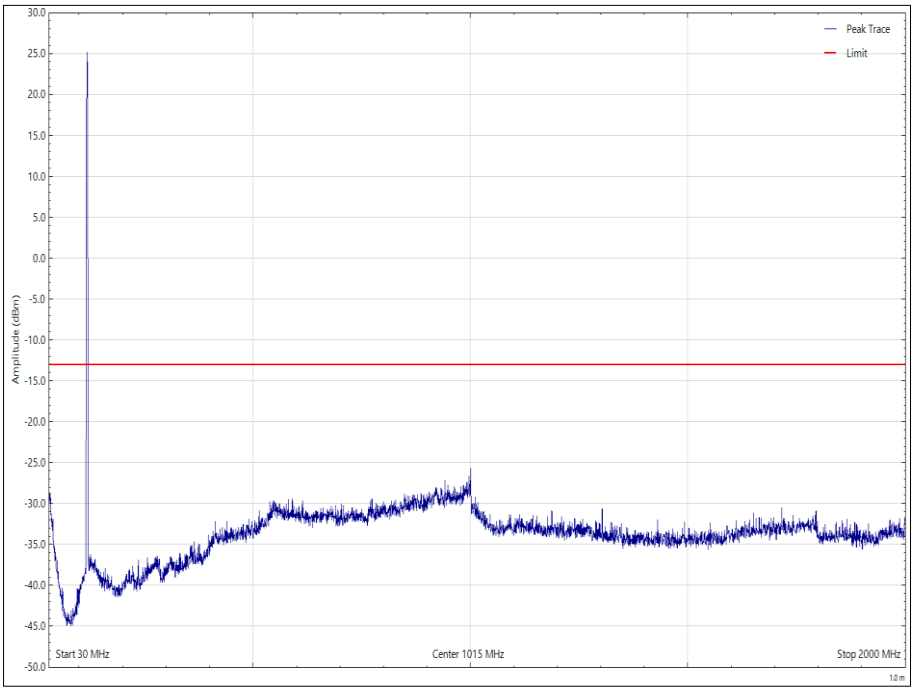

Figure 23 - 118.000 MHz - 30 MHz to 2 GHz - Vertical - Z Orientation

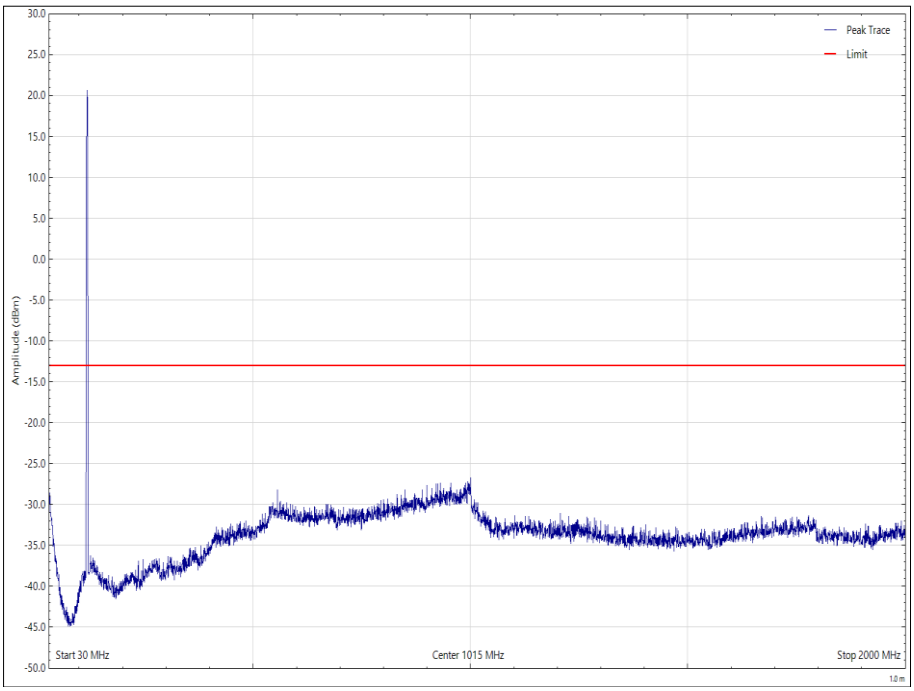

Figure 24 - 118.000 MHz - 30 MHz to 2 GHz - Horizontal - Z Orientation

Frequency (MHz)	Level (dBm)
*	

Table 25 - 127.500 MHz - Emissions Results

*No emissions were detected within 10 dB of the limit.

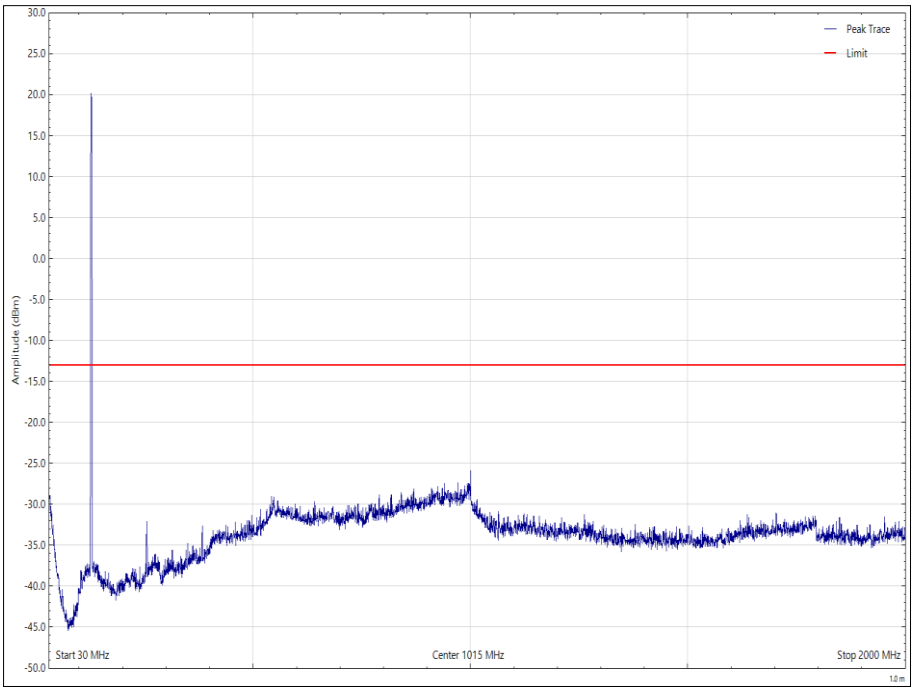

Figure 25 - 127.500 MHz - 30 MHz to 2 GHz - Vertical - X Orientation

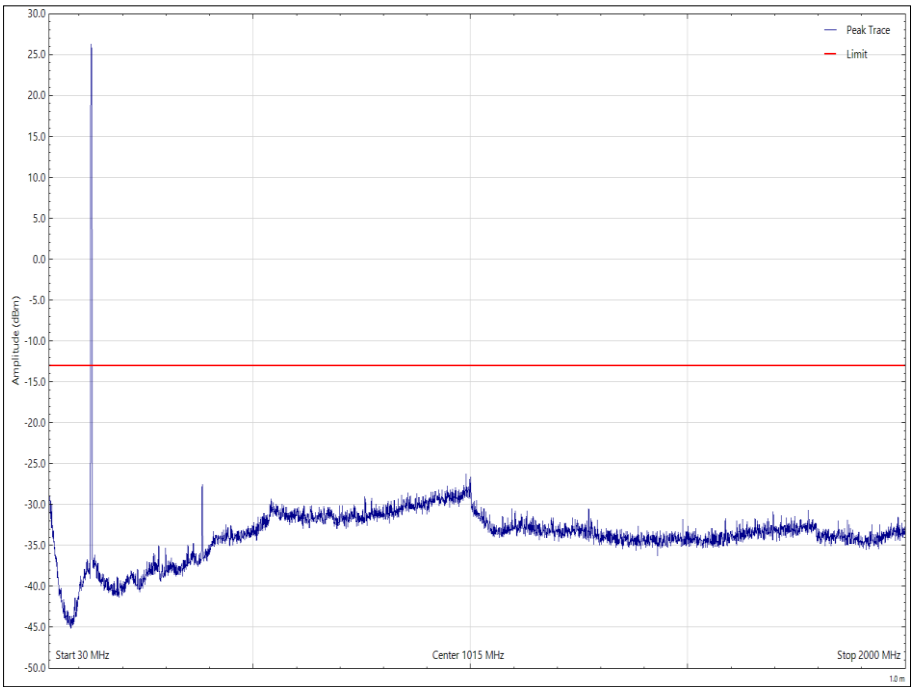

Figure 26 - 127.500 MHz - 30 MHz to 2 GHz - Horizontal - X Orientation

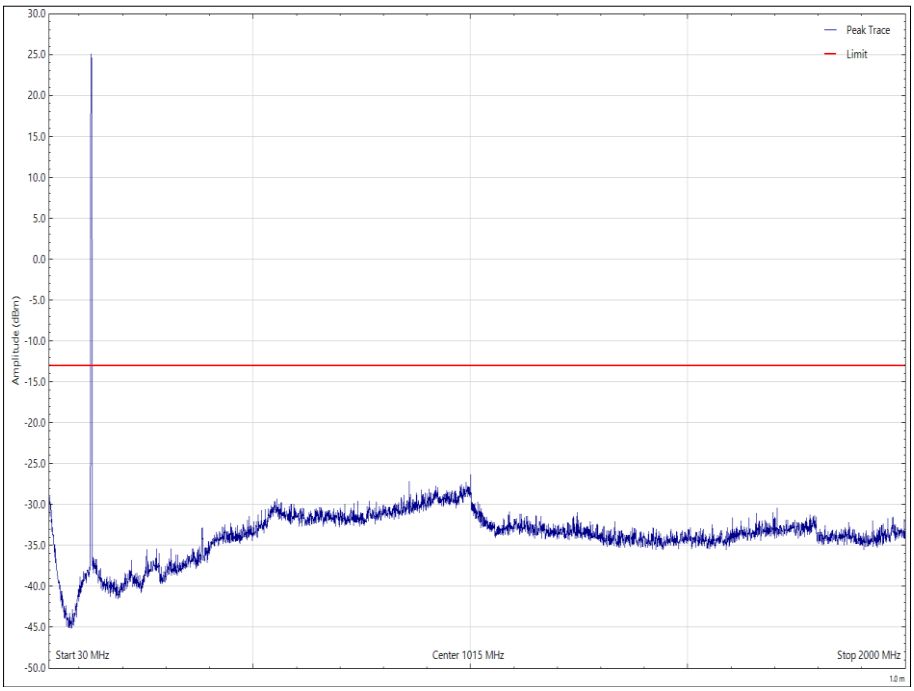

Figure 27 - 127.500 MHz - 30 MHz to 2 GHz - Vertical - Y Orientation

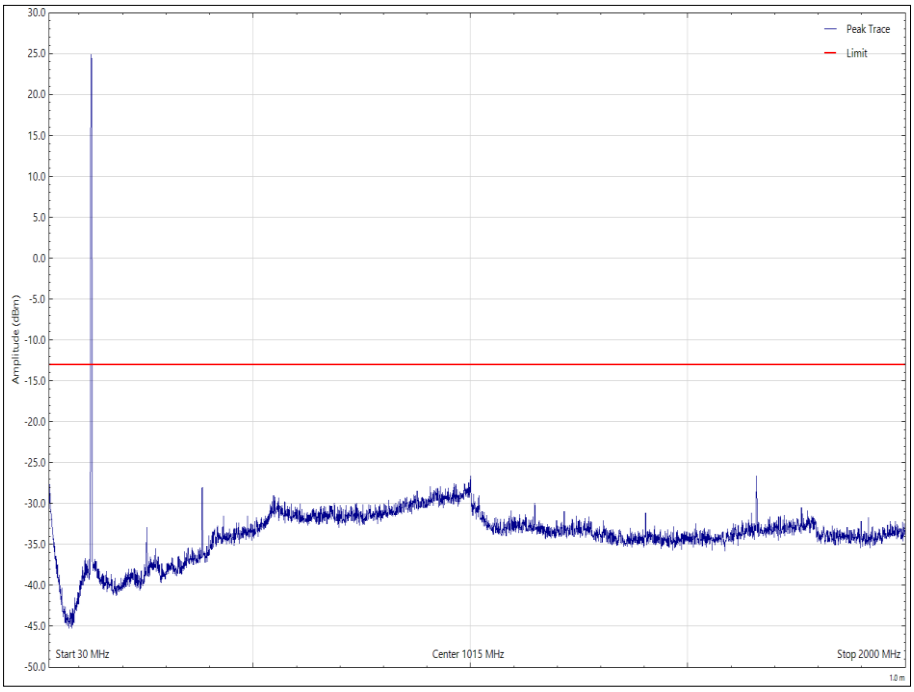

Figure 28 - 127.500 MHz - 30 MHz to 2 GHz - Horizontal - Y Orientation

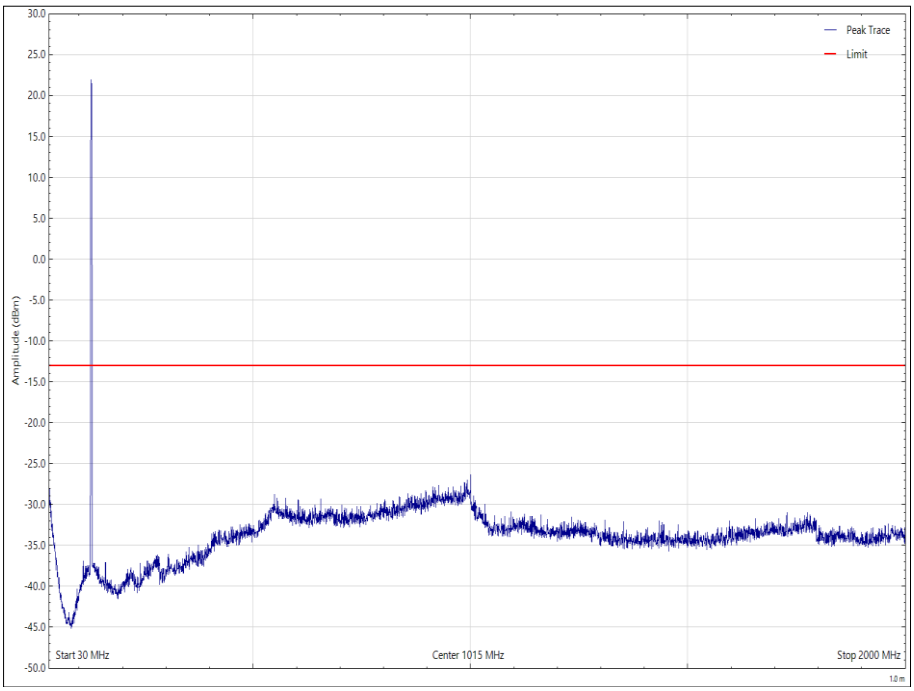

Figure 29 - 127.500 MHz - 30 MHz to 2 GHz - Vertical - Z Orientation

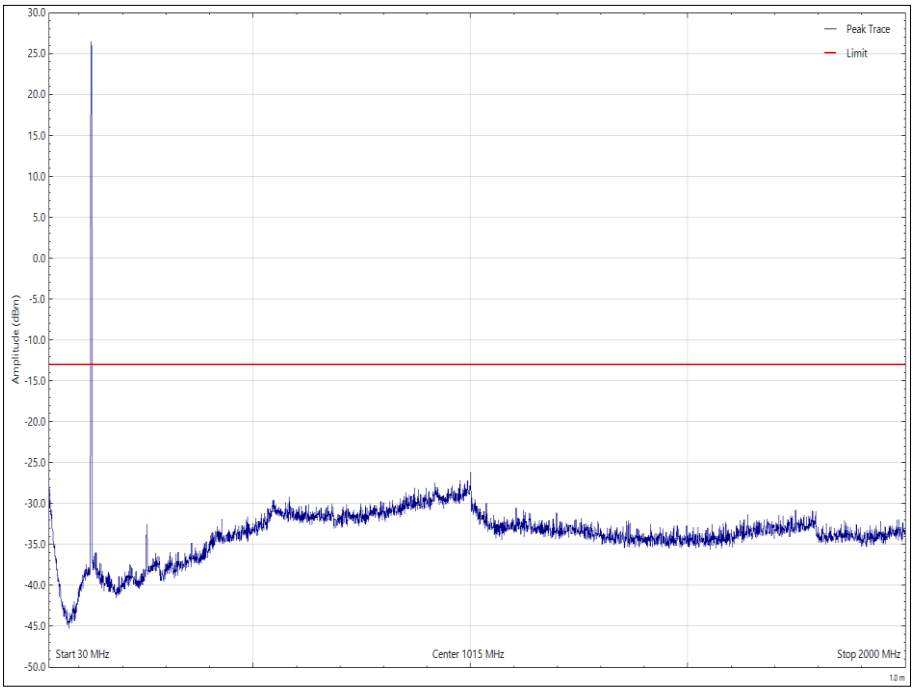

Figure 30 - 127.500 MHz - 30 MHz to 2 GHz - Horizontal - Z Orientation

Frequency (MHz)	Level (dBm)
*	

Table 26 - 136.975 MHz - Emissions Results

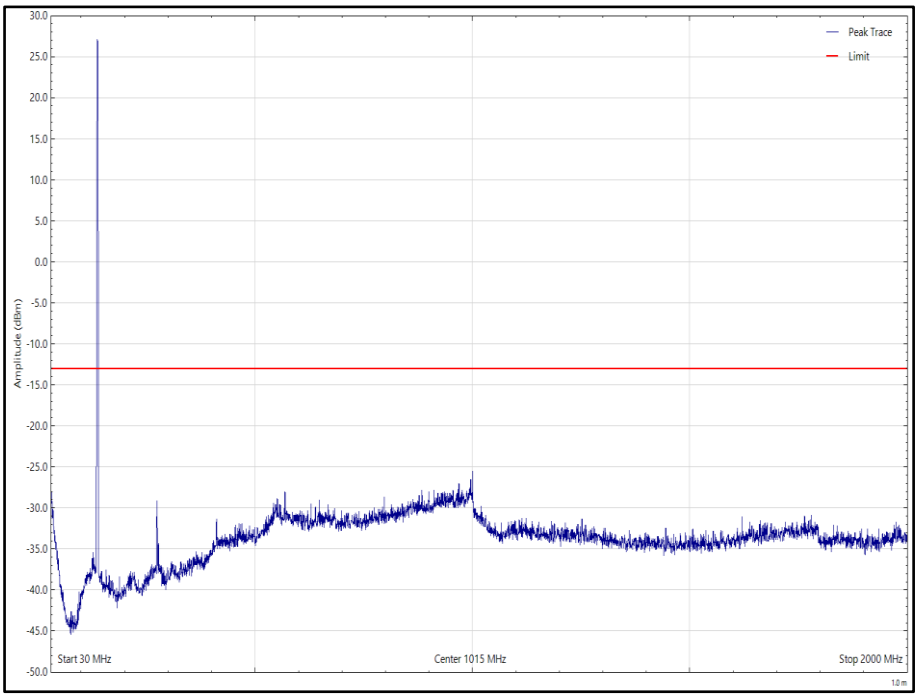

Figure 31 - 136.975 MHz - 30 MHz to 2 GHz - Vertical - X Orientation

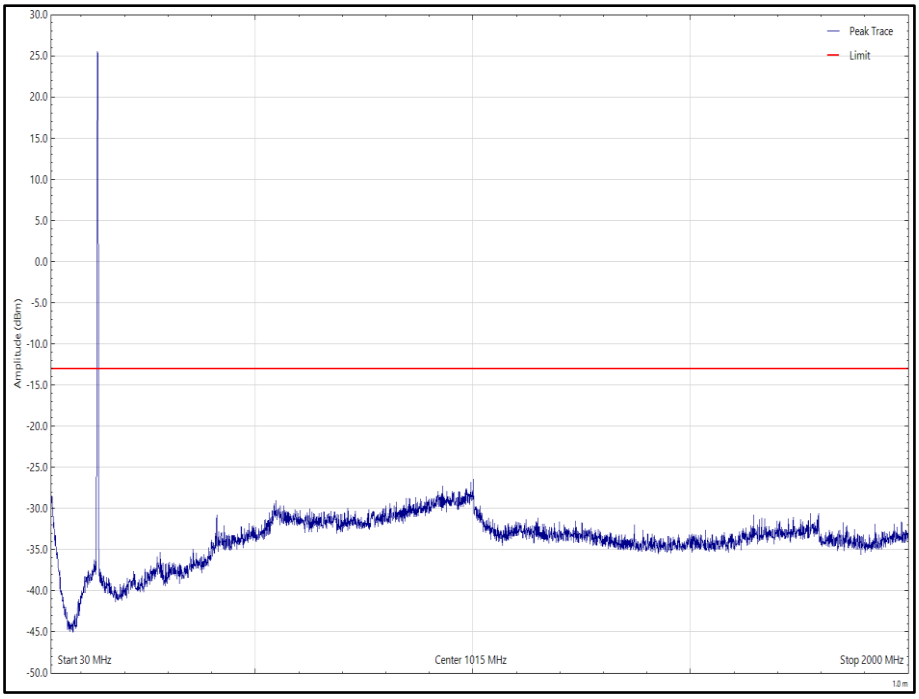

Figure 32 - 136.975 MHz - 30 MHz to 2 GHz - Horizontal - X Orientation

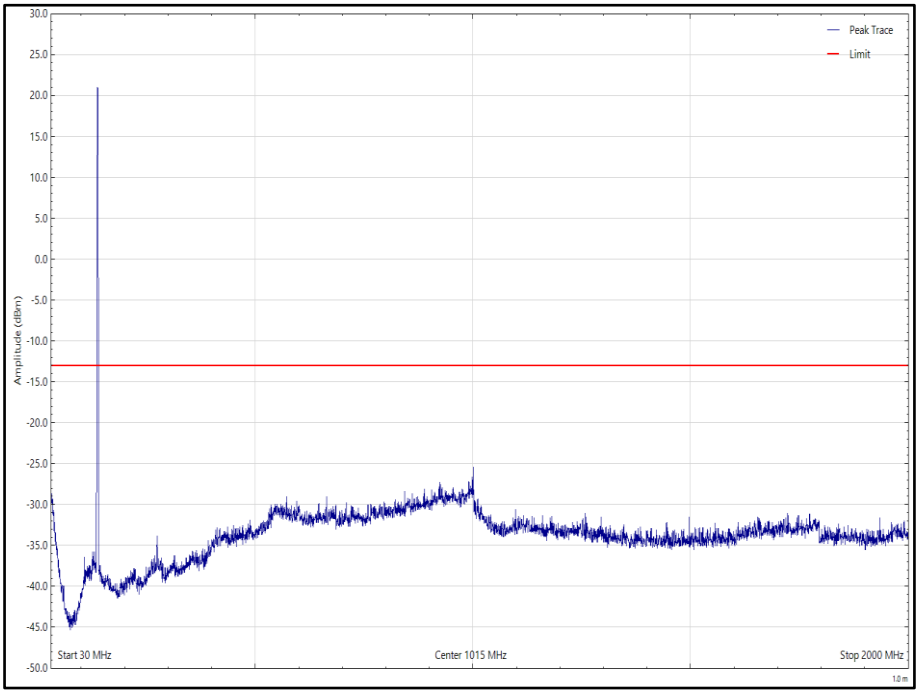

Figure 33 - 136.975 MHz - 30 MHz to 2 GHz - Vertical - Y Orientation

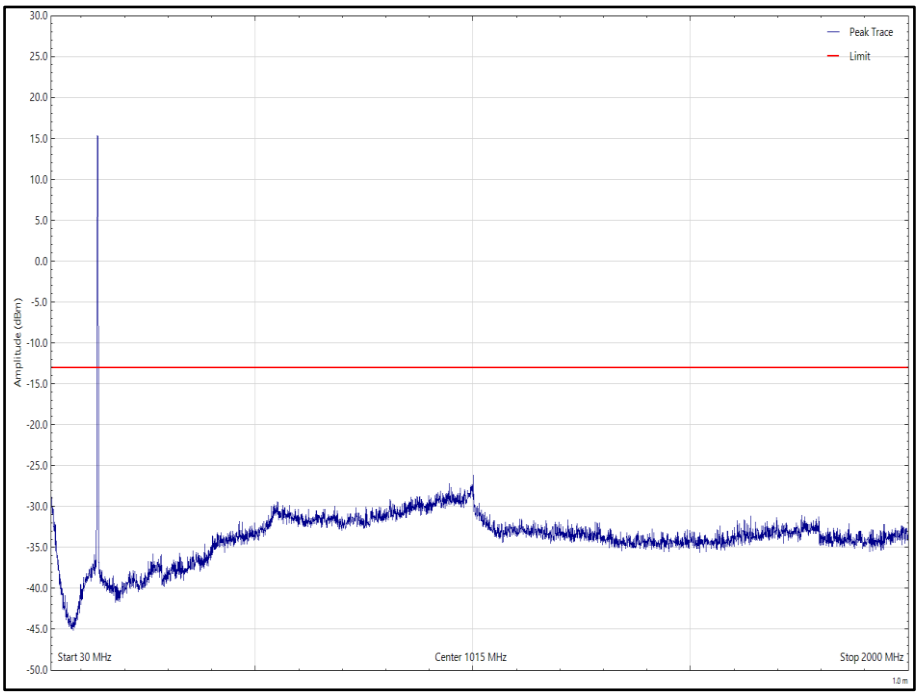

Figure 34 - 136.975 MHz - 30 MHz to 2 GHz - Horizontal - Y Orientation

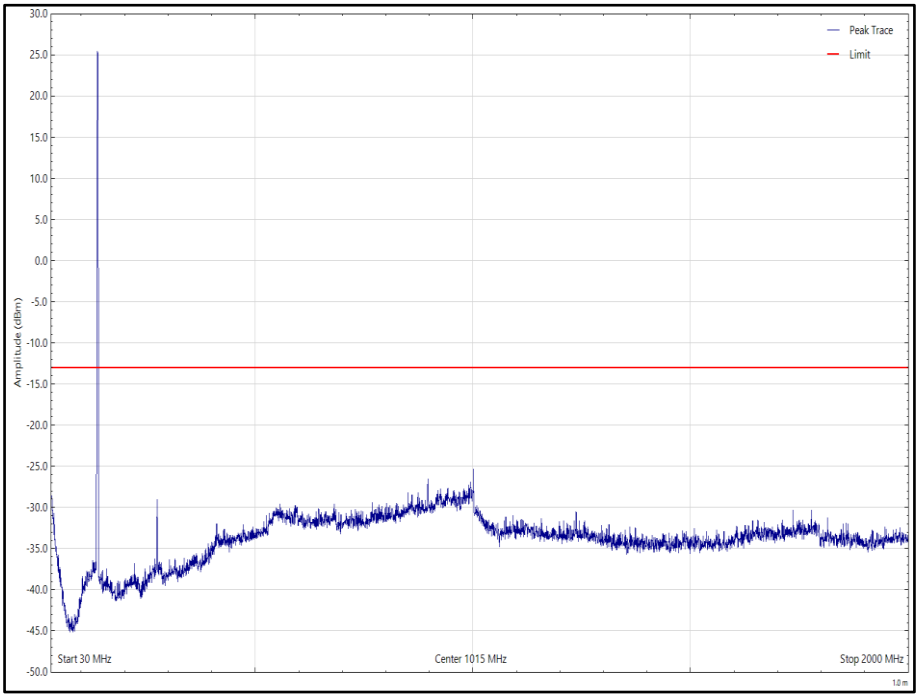

Figure 35 - 136.975 MHz - 30 MHz to 2 GHz - Vertical - Z Orientation

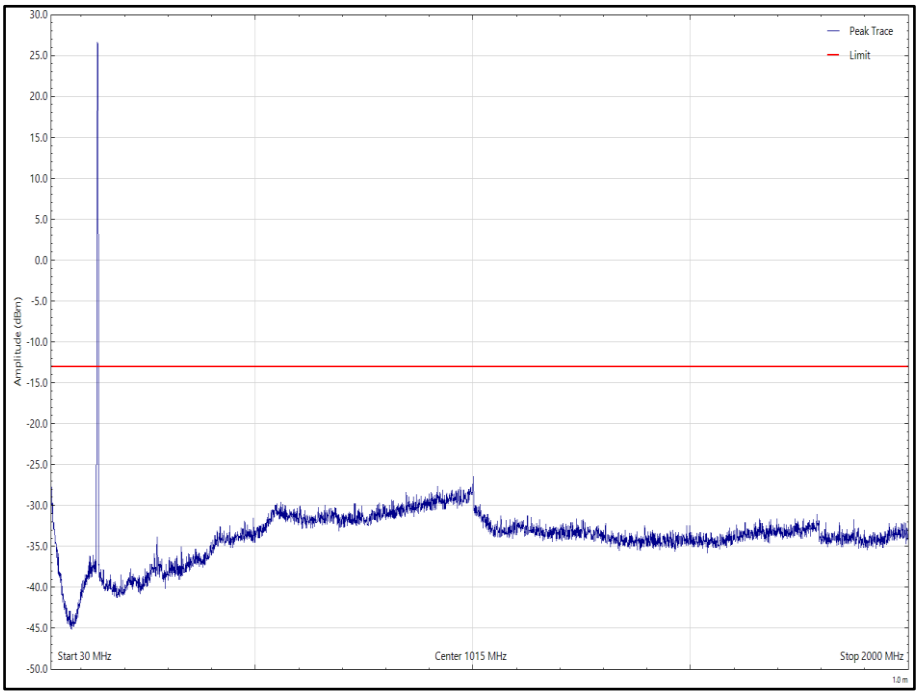

Figure 36 - 136.975 MHz - 30 MHz to 2 GHz - Horizontal - Z Orientation

FCC 47 CFR Part 87, Limit Clause 87.139 (a)

Except for ELTs and when using single sideband (R3E, H3E, J3E), or frequency modulation (F9) or digital modulation (F9Y) for telemetry or telecommand in the 1435-1525 MHz, 2345-2395 MHz, or 5091–5150 MHz band or digital modulation (G7D) for differential GPS, the mean power of any emissions must be attenuated below the mean power of the transmitter (pY) as follows:

(1) When the frequency is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth the attenuation must be at least 25 dB;

(2) When the frequency is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth the attenuation must be at least 35 dB.

(3) When the frequency is removed from the assigned frequency by more than 250 percent of the authorized bandwidth the attenuation for aircraft station transmitters must be at least 40 dB; and the attenuation for aeronautical station transmitters must be at least 43 + 10 log10 pY dB.

2.5.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Modulation Analyser	Hewlett Packard	8901B	45	12	26-May-2023
Audio Analyser	Hewlett Packard	8903B	1350	12	04-Feb-2023
Screened Room (5)	Rainford	Rainford	1545	36	15-Apr-2024
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Comb Generator	Schaffner	RSG1000	3034	-	TU
Mast Controller	Maturo Gmbh	NCD	4810	-	TU
Tilt Antenna Mast	Maturo Gmbh	TAM 4.0-P	4811	-	TU
Antenna (DRG 1-10.5GHz)	Schwarzbeck	BBHA9120B	4848	12	28-May-2023
Cable (sma to sma 2m)	Junkosha	MWX221-02000AMSAMS/A	5517	12	12-Apr-2023
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/B	5520	12	24-Mar-2023
EMI Test Receiver	Rohde & Schwarz	ESW44	5527	12	28-Apr-2023
Antenna (Bi-Log, 30 MHz to 1 GHz)	Teseq	CBL6111D	5615	24	16-Oct-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	22-Sept-2022

Table 27

TU – Traceability Unscheduled

2.6 Modulation Requirements

2.6.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1047
FCC 47 CFR Part 87, Clause 87.141

2.6.2 Equipment Under Test and Modification State

PJ2+, S/N: Not serialised Storix ID (650288-002) - Modification State 0

2.6.3 Date of Test

14-June-2022

2.6.4 Test Method

The test was performed in accordance with KDB 971168 D01, clause 3.

2.6.5 Environmental Conditions

Ambient Temperature	24.8 °C
Relative Humidity	44.4 %

2.6.6 Test Results

VHF transmitter

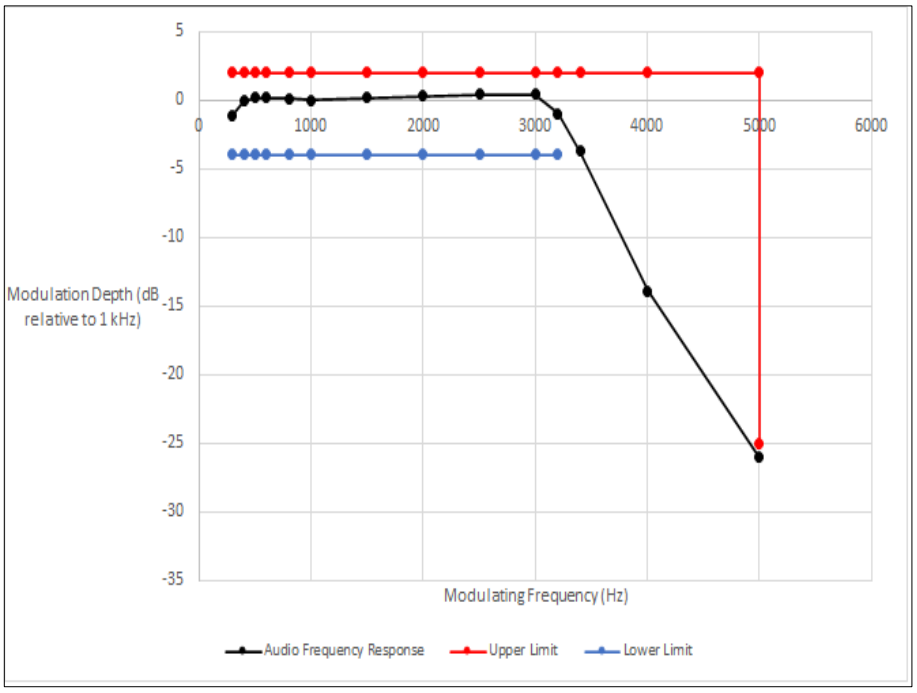

Figure 37 - Frequency Response

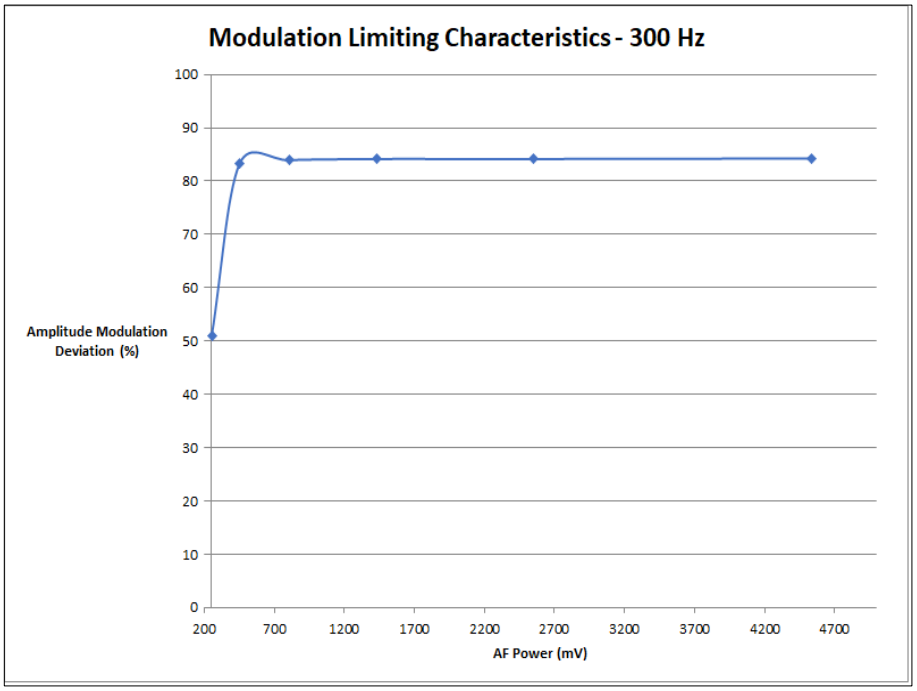

Figure 38 - Modulation Limiting – 300 Hz

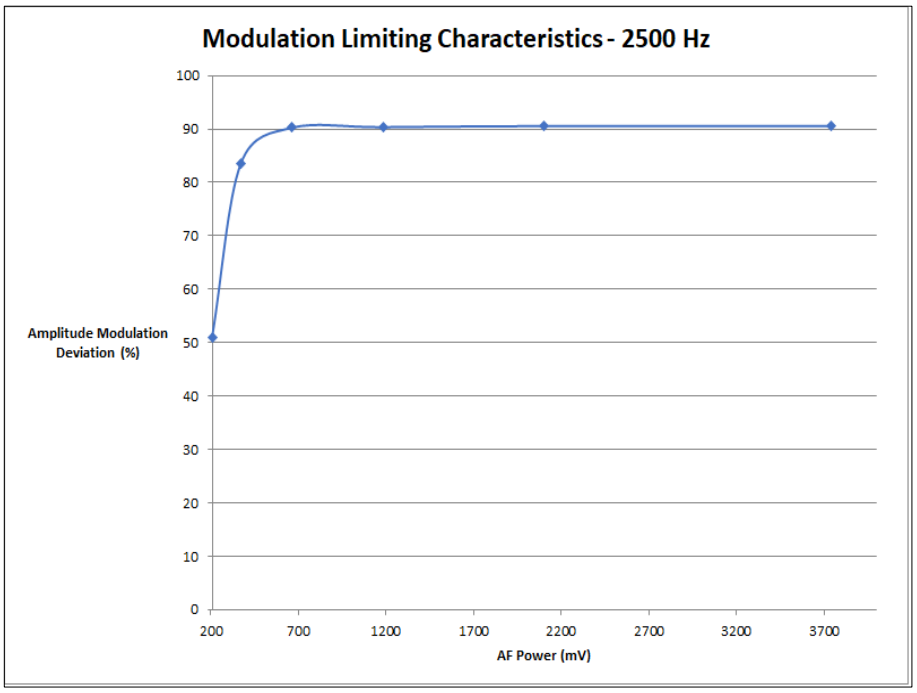

Figure 39 - Modulation Limiting – 2500 Hz

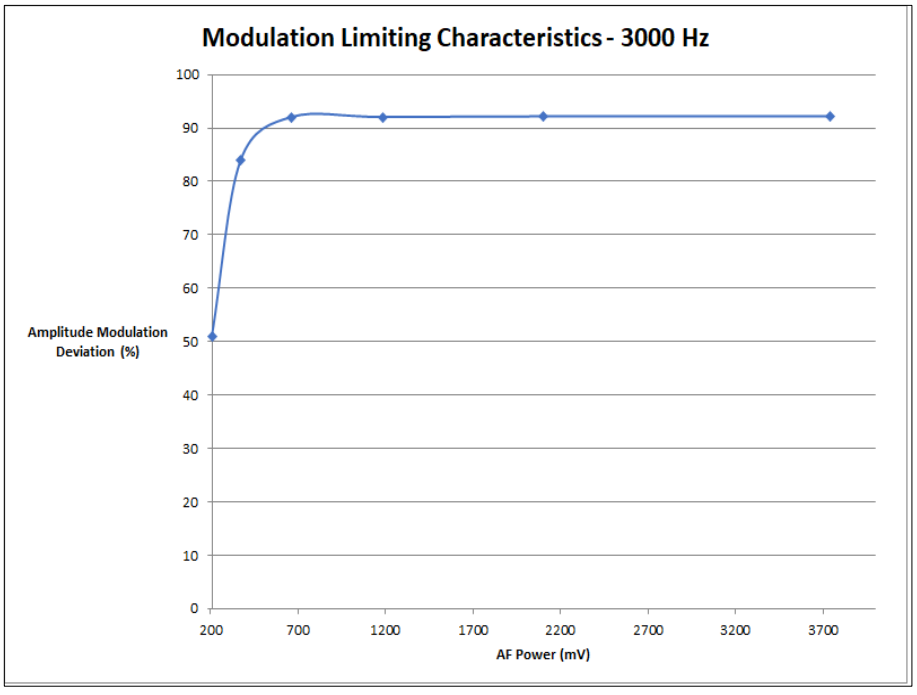

Figure 40 - Modulation Limiting – 3000 Hz

2.6.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Modulation Analyser	Hewlett Packard	8901B	45	12	26-May-2023
Sensor	Hewlett Packard	11722A	493	12	25-Aug-2022
Audio Analyser	Hewlett Packard	8903B	1350	12	04-Feb-2023
Attenuator (30dB, 150W)	Narda	769-30	3369	12	26-Jul-2022
True RMS Multimeter	Fluke	179	4006	12	29-Mar-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	30-Jun-2022
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5475	12	25-Apr-2023

Table 28

O/P Mon – Output Monitored using calibrated equipment

3 Photographs

3.1 Test Setup Photographs

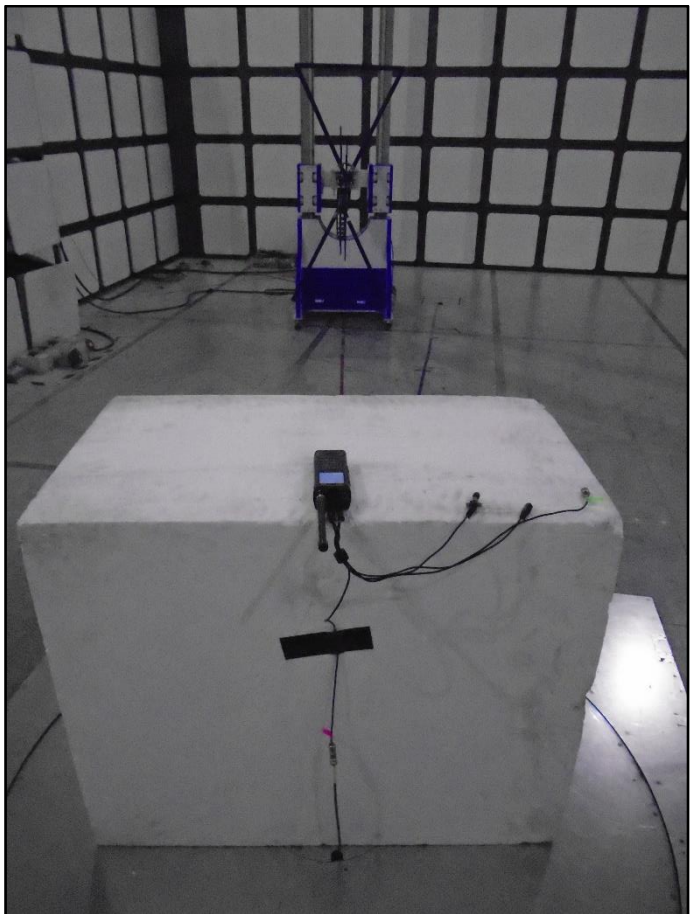

Figure 41 - Test Setup - 30 MHz to 1 GHz - X Orientation

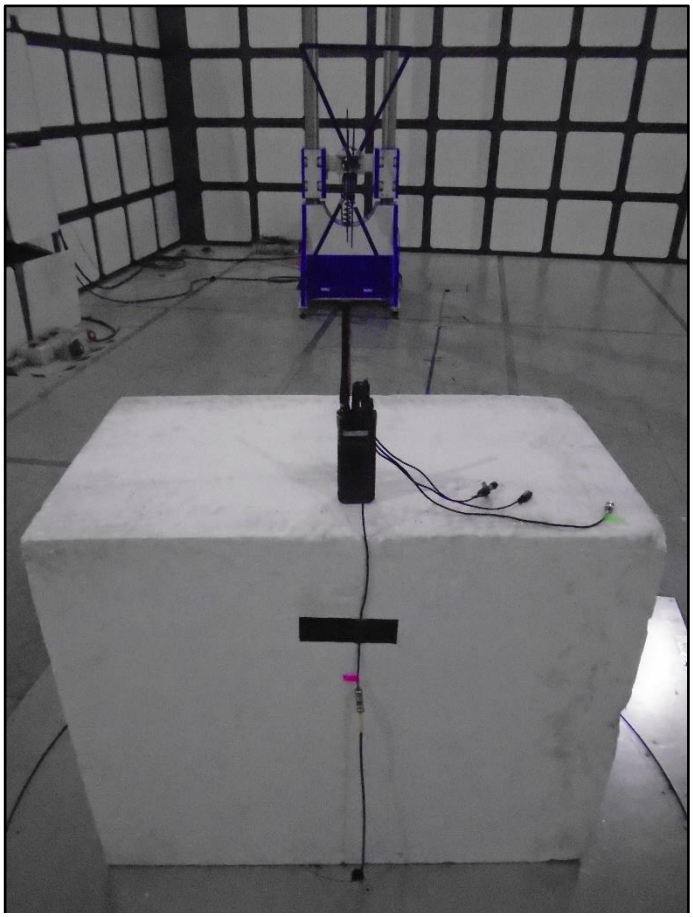

Figure 42 - Test Setup - 30 MHz to 1 GHz - Y Orientation

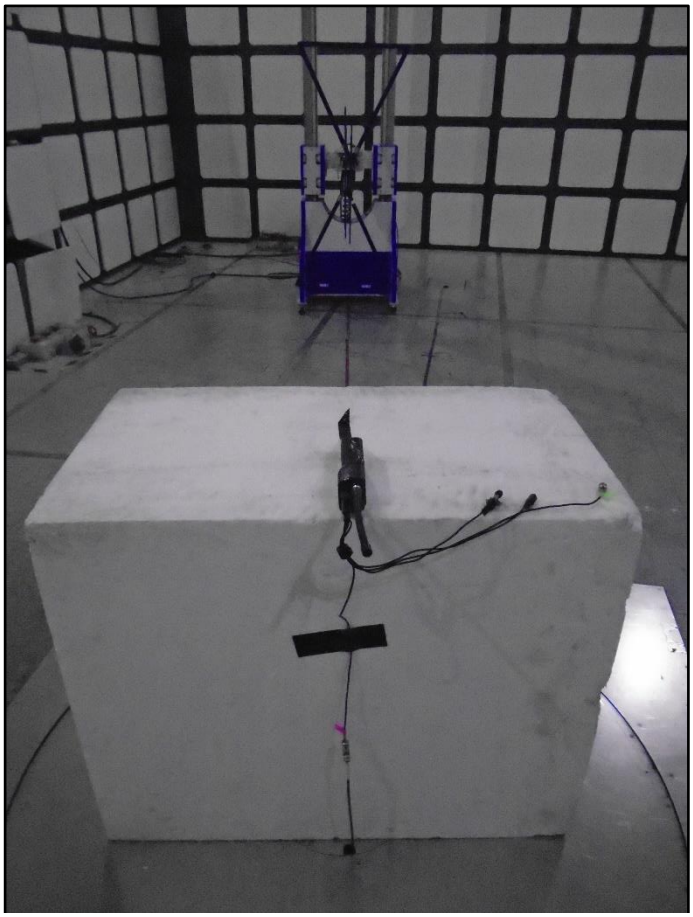

Figure 43 - Test Setup - 30 MHz to 1 GHz - Y Orientation

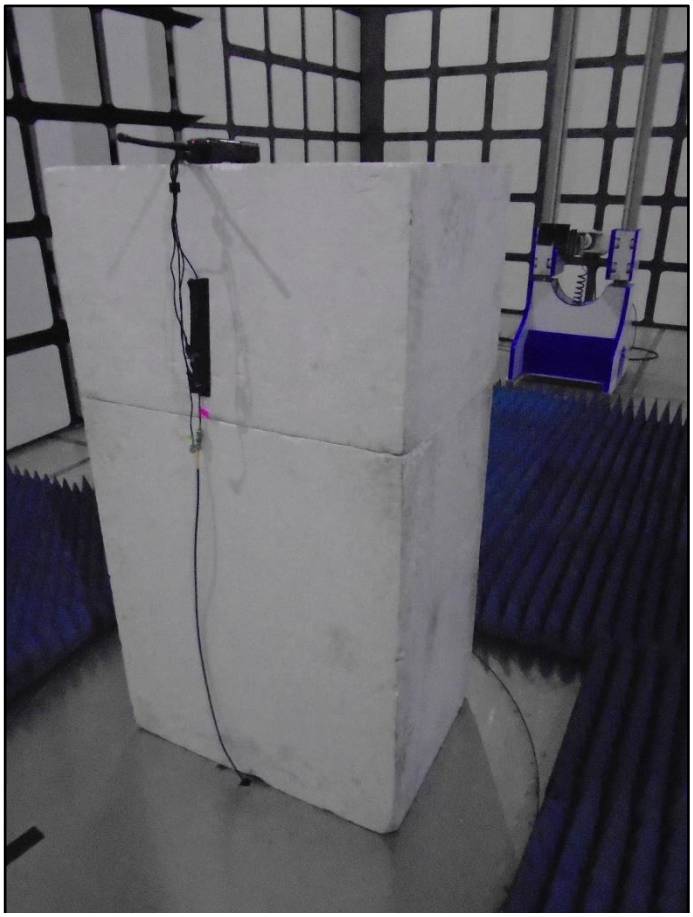

Figure 44 - Test Setup - 1 GHz to 2 GHz - X Orientation

Figure 45 - Test Setup - 1 GHz to 2 GHz - Y Orientation

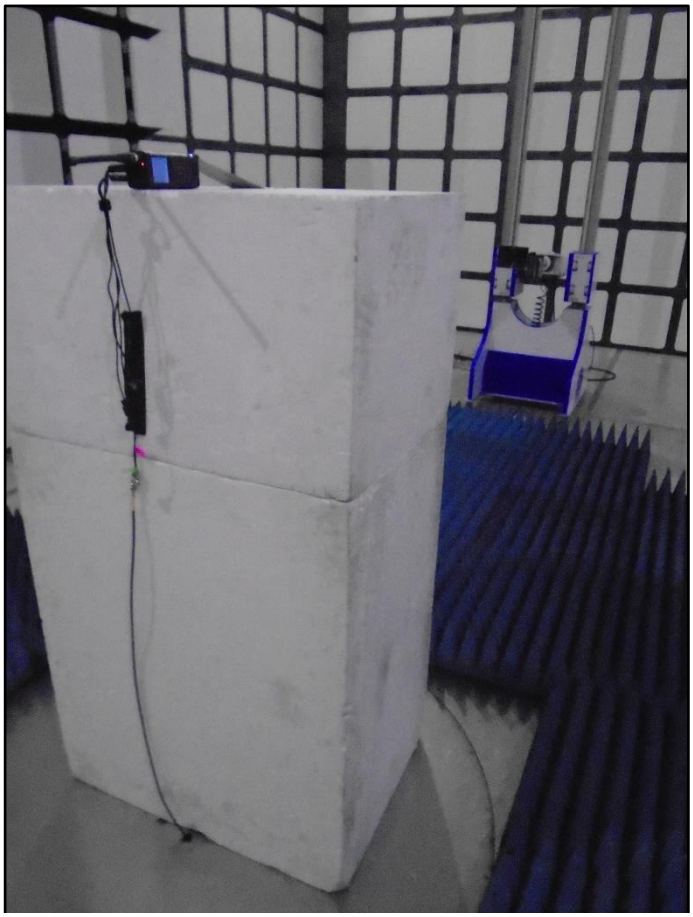

Figure 46 - Test Setup - 1 GHz to 2 GHz - Z Orientation

4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Power and Emissions	± 3.2 dB
Frequency Stability	± 8.03 Hz
Bandwidth of Emission	± 91 Hz
Spurious Emissions at Antenna Terminals	± 3.45 dB
Radiated Spurious Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 18 GHz: ± 6.3 dB
Modulation Requirements	-

Table 29

Measurement Uncertainty Decision Rule – Accuracy Method

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2007, Clause 4.4.3 and 4.5.1. (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.